The Technology-to-Performance Chain: How Lead Management Systems Drive Inside Sales Performance

By

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LIST OF ABBREVIATIONS

AS:	Adaptive Selling
AVE:	Average Variance Extracted
B2B:	Business-to-Business
B2C:	Business-to-Consumer
CA:	Cronbach's Alpha
CP:	Call Productivity
CR:	Composite Reliability
CRM:	Customer Relationship Management
F^2:	Effect Size
HCM:	Hierarchical Component Model
IT:	Information Technology
LFU:	Lead Follow-Up
LMS:	Lead Management Systems
MOA:	Motivation, Opportunity and Ability
PLS:	Partial Least Squares
PLS-SEM:	Partial Least Square Structural Equation Modelling
PS:	Presentation Skills
R^2:	Coefficient of Determination
Q^2:	Predictive Relevance
ROI:	Return-on-Investment
SEM:	Structural Equation Modelling
SFA:	Sales Force Automation
SK:	Selling Knowledge
SME:	Small and Medium Enterprises
SP:	Sales Performance
TPC:	Technology-to-Performance Chain
TPUM:	Technology Performance Usage Model
TS:	Targeting Skills
TTF:	Technology-Task-Fit
VIF:	Variance Inflation Factor

ABSTRACT

Understanding how technology usage influences performance in the inside sales industry has become an important issue for practitioners. Yet, there is a dearth of literature in this area. Inside sales are sales that are performed remotely using the phone or Internet technologies. Leads (i.e., potential customers) are the life-blood of any inside sales setting, and their effective management is crucial for business success. Lead management systems are information technology (IT) tools designed to automate and support effective lead management.

This study developed a conceptual model based on the Technology-Task-Fit (TTF) theory, capturing the impact of lead management systems on inside sales performance through the following mediating mechanisms: task characteristics (call productivity and effort on lead follow-up), selling behaviour (adaptive selling) and salesperson characteristics (salesperson's competency). To validate this model, we conducted an empirical study with 108 responses collected from sales managers and decision makers. Using PLS-SEM for the analysis, our findings show that the use of lead management systems affects inside sales performance via improving salespeople's adaptive selling, effort on lead follow-up and competency. The findings of this study contributes to the inside sales literature, and also educate practitioners of the key enablers of inside sales performance and technology usage approaches to the inside sales process.

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CHAPTER ONE: INTRODUCTION

The impact of the adoption of information technology (IT) on sales performance cannot be overemphasized. Customer relationship management (CRM) tools have supported the resourceful execution of the sales function (Ahearne, Hughes, and Schillewaert, 2007; Ahearne, Jones, Rapp, and Mathieu, 2008; Buehrer, Senecal, and Bolman Pullins, 2005). Advances in IT have been the catalyst for significant changes in sales operations (Rapp, Agnihotri, and Forbes, 2008). These changes are driven by the need to enhance operational efficiency, meet customer requirements and use multiple sales channels (Piercy, 2006). The reaction to these changes has forced most organizations to restructure their sales function through a rapid increase in the utilization of inside sales (Gessner and Scott Jr, 2009).

Existing literature overflows with studies focusing on adoption-driven constraints for sales technologies, mostly covering prerequisites associated with outside sales (i.e., Avlonitis and Panagopoulos, 2005; Jones, Sundaram, and Chin, 2002; Parthasarathy and Sohi, 1997; Robinson Jr, Marshall, and Stamps, 2005; Schillewaert, Ahearne, Frambach, and Moenaert, 2000, 2005). These researches to date have focused on technology acceptance, and not as much on the direct performance consequences of using these technologies. These researchers have also approached sales technology acceptance with an indirect assumption that there is a positive relationship between adoption and performance (Ahearne, Srinivasan, and Weinstein, 2004). But then, what happens after the sales technology is accepted? Would well-organized and efficient usage of the technology improve sales performance?

In this study, we look at the most efficient practices that enable IT to amplify and strengthen key aspects of sales performance in the inside sales industry.

1.1. RESEARCH RATIONALE

There is currently a shortage of data and literature on inside sales, and particularly of studies on sales-technology approaches to the inside sales process that can help shape future development decisions and enhance sales performance. Despite the fact that the field of inside sales is known to be an early adopter of CRM technology, little has been done to study it (Dickie and Trailer, 2006). The term "***inside sales***" is defined as "***remote sales or professional sales done remotely"*** (Krogue, 2013). They enable individuals or groups to advocate for their products and services to prospective customers via the telephone or the Internet rather than via traditional in-person interaction (Seley and Holloway, 2008). In view of the effort put into them, most inside sales are conducted, understandably, in business-to-business (B2B) environments (Davis, 2013, Krogue, 2013). The fact that this is a rapidly evolving trend in the business world means that it requires in-depth exploration. A trends study conducted in 2009 found that inside sales were consistently growing as an industry (Oldroyd, 2009) and in 2013 the growth rate of inside sales was found to be 5% greater than that of outside sales (Warner, 2013).

A crucial success factor in any inside sales setting is the efficacy with which leads and contacts are managed. A lead is a documented interest in an organization's product or service, irrespective of whether that interest is from a new prospect or from an existing customer (Monat, 2011). It usually contains the basic information a salesperson needs in order to make that first contact with a potential customer (Griggs, 1997). Lead

management incorporates a set of organized processes and procedures to make certain that all generated and qualified leads are pursued by sales.

The diligent follow-up of sales leads is a crucial part of the customer-acquisition process in B2B firms (Sabnis, Chatterjee, Grewal, and Lilien, 2013). B2B organizations spend an estimated $30 to $200 on each marketing lead generated, while B2C (business-to-consumer) organizations spend an estimated $2 to $25 per lead generated through advertising, web campaigns and trade-show efforts (Olenski, 2012). Notwithstanding the substantial investments that are made, statistics show that the majority of these leads are ignored and never contacted (Griggs, 1997; MarketingSherpa, 2011) because of a poor work ethic among sales personnel (Sabnis *et al.*, 2013) and because of inefficient lead management systems (Griggs, 1997; Vanillasoft, 2014). Well organized lead management is an important part of marketing effectiveness. Failure to efficiently manage leads diminishes sales results and increases costs, which ultimately hinders the ability of sales and marketing programs to achieve financial and organizational objectives. Nevertheless, few academic studies have attempted to research the best lead management practices in order to address this problem and thereby improve customer-acquisition activities (Elkington and Oldroyd, 2007; Sabnis *et al.*, 2013).

It is important to note that no study has yet addressed the role of lead management systems and specifically how well organized practices within lead management can help to drive sales performance in the inside sales industry. We believe there is a strong potential to address the challenges faced by inside sales in terms of lead management by means of carefully designed lead management systems. The processes and systems involved in

resourcefully managing these leads are prerequisites for sales success. Hence organizations need comprehensive lead management systems built on best practices.

A key objective of deploying lead management systems is to make certain that the best lead is contacted at the appropriate time by the appropriate salesperson, regardless of whether it is a first time or follow-up contact with the lead. The ability to get this right is highly dependent on how leads are selected. A lead management system can be either ***list-based*** or ***queue-based***. A list-based system presents a salesperson with a list of leads and it is upon the salesperson to filter and select the next lead to contact. A salesperson always has to go back to a list to choose the next lead to contact. A queue-based system, however, uses predefined business rules and a configured workflow sequence to automatically filter and present a salesperson with the next best lead to contact. When the salesperson is done with a lead, the system automatically assigns the next best lead to him/her to contact. In this sense, one can argue that a lead management system integrates an operational inside sales selling strategy by being either list-based or queue-based. ***In this study, we look at the practices that enable information systems to leverage and strengthen key aspects of sales performance in the inside sales industry***.

1.2. RESEARCH OBJECTIVE

The ***objective of the study is to compare and identify the most effective and efficient lead-management system (list-based or queue-based) that influences the key drivers and enablers that drive optimum sales performance in the inside-sales industry***. In order to achieve this objective, we seek to answer the following questions:

1. What are the drivers and enablers of inside sales performance?
2. What are the impacts of lead management systems on inside sales performance?

3. How do list-based and queue-based lead management systems impact inside sales performance?

1.3. RESEARCH METHODOLOGY

In this research, we implement Partial Least Square Structural Equation Modeling (PLS-SEM) methodology. PLS-SEM is used to study relationships between variables by evaluating the validity of theories using empirical data (Urbach and Ahlemann, 2010). Figure 1 shows the Framework for applying PLS-SEM.

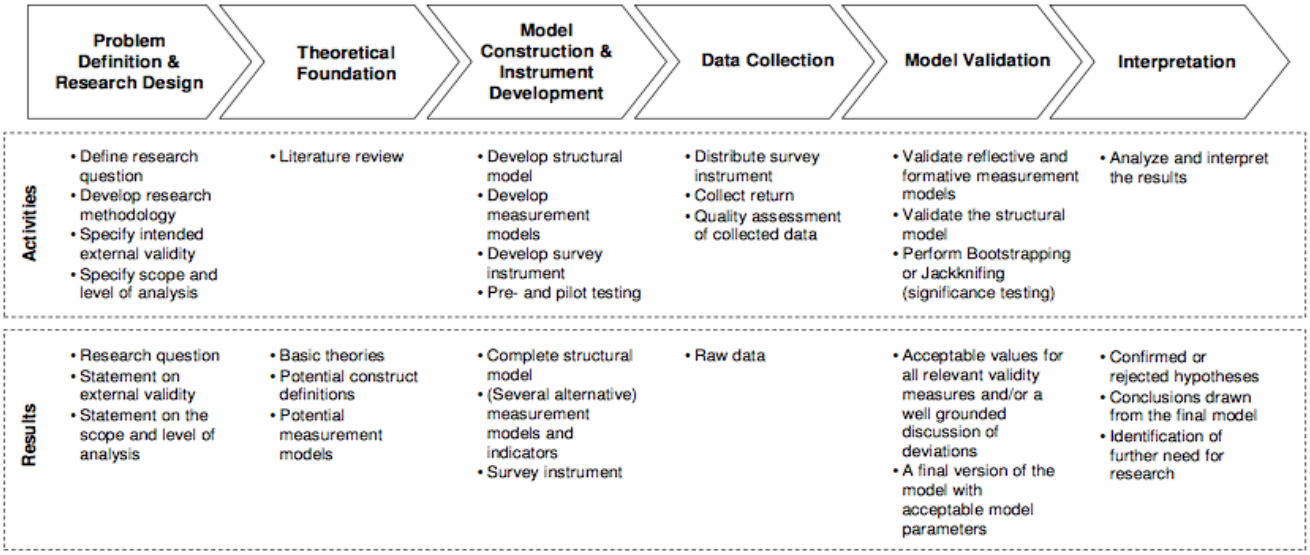

Figure 1: A Framework for Applying PLS-SEM (Urbach and Ahlemann, 2010)

As represented in Figure 1, each phase contains the activities to be carried out and the outcomes of these activities. The research process is implemented as follows:

- **Problem Definition and Research Design:** The first phase of our research acknowledges the need for our study, identifies our research objective as well as a systematic plan for achieving our objective.

- **Theoretical Foundation:** Here, we carry out a review of the inside sales state of the art. We recognize and discuss existing theories and concepts in sales research and select those we will adapt in our research.
- **Model Construction:** We develop a hypothesized model from the literature as well as from the assessment of practitioners' experiences. Finally we propose our conceptual model.
- **Instrument Development and Data Collection:** We formulate measurement instruments for concepts in our model. We validate our survey, identify our sample population, and collect the data.
- **Model Validation:** We use SmartPLS (Ringle, Wende, and Will, 2005) to validate our model and statistically test our hypotheses with data collected from our survey. We provide visual representations of the results of each analysis that we carry out.
- **Interpretation:** Here, we confirm or reject the relationships in our conceptual model. We provide theoretical and managerial (practitioner) implications and identify the contributions and outcomes of our research. Finally, we specify areas of this research that require more exploration.

1.4. RESEARCH CONTRIBUTION

The findings from this research study will contribute to the inside-sales literature by evaluating both past and present research efforts and industrial developments as well as by helping to educate the market on sales-technology approaches to the inside-sales process which can contribute to shaping future development decisions and enhancing sales performance.

1.5. THESIS ORGANIZATION

This thesis is composed of six chapters. In the current chapter, we have the introduction, research rationale, objective, and research procedure. In the second chapter, we provide a literature review on inside sales and a discussion of the impact of IT on inside sales. The third chapter presents theories we adapted and our conceptual model. The research design and data collection method used are discussed in chapter four. In the fifth chapter, we provide a step-by-step analytical evaluation of our conceptual model. Finally, in chapter six, we discuss the findings of our research and highlight our key contributions, limitations, and future research opportunities.

CHAPTER 2: LITERATURE REVIEW

In this literature assessment, we review and establish the importance of inside sales. We discuss sales technology and its impact on sales performance. We review Lead management systems and how they facilitate the sales function, particularly within the inside sales industry.

2.1. INSIDE SALES

The Sales function is commonly acknowledged to be concerned with contacting prospects and customers, selling products and services, taking orders and following up on sales (Laudon, Laudon, and Brabston, 2007). There are currently two types of sales methods, outside sales and inside sales. Outside sales refer to the sale of products and services away from a company's place of business, usually at a customer's place of business or their home. In distinctiveness, we refer to inside sales as a sales method which utilizes one or more sets of IT tools to carry out sales of products and services remotely (i.e., over the phone, e-mail, the Web, and other Internet-based technologies) without the traditional face-to-face interaction with customers (Seley and Holloway, 2008).

In the 1980s, the concept of inside sales was introduced in the United Kingdom (UK) in an effort to distinguish telemarketing or telesales from the more complex phone-oriented business-to-business (B2B) and high quality business-to-consumer (B2C) selling practices (Krogue, 2013). Sales organizations are increasingly utilizing inside sales with a view to reduce cost and optimize organizational performance (Dickie and Trailer, 2006; Gessner and Scott Jr, 2009; Piercy, 2006; Rapp, Beitelspacher, Schillewaert, and Baker, 2012), mostly in small and medium enterprises (SMEs) (Krogue, 2013).

In recent years, inside sales have witnessed a spectacular growth. They are currently outpacing the growth of outside sales. The dominant nature of inside sales over outside sales has been discussed in the literature. For instance, Narus and Anderson (1986) claimed that the increasing cost of an outside sales call and the pervasive use of innovative telecommunication technologies has forced the shift of many routine and recurring tasks (i.e., managing marginal accounts) to inside sales. This literature also predicted that the industrial sales force in the future will constitute the majority of inside sales persons. This is fast becoming a reality because, as documented in a 2009 remote sales trends study, inside sales were growing as an industry and the inside sales department is typically as large as the outside sales department (Ostrow, 2009). Also, in 2013, an inside sales market size survey revealed that over 42,000 non-retail inside sales jobs are generated every year and over 50% of sales departments are being dominated by inside salespeople, the number of which is projected to reach 2.6M in the USA by 2020 (Warner, 2013) (See Figure 2).

Seley and Holloway (2008) reported that the inside sales function is fast becoming a potential replacement for the outside sales force as the amount of selling that happens from the inside is growing aggressively around the world. It was also revealed that the need for sales managers to still enforce the face-to-face selling method in order to effectively secure customer engagement and make sales possible has been tackled with advanced technologies such as web collaboration, social networking and e-mail, enabling inside sales reps to personalize interactions, and build and sustain strong and long term customer relationships. Revenue maximization, sales cycle acceleration, cost reduction, increased sales, and better communication and engagement are, among others, major benefits of inside sales as identified in Seley and Holloway (2008).

Rapp *et al.* (2012) recommended that sales managers who are interested in restructuring the sales function should take into account the potential cost savings emanating from using an inside sales force. This literature also suggested that sales managers should note that the outside sales force is still essential for maintaining effective customer relationships.

The supremacy of inside sales has gone far beyond what one would expect. Over the last several years, B2B companies have been ramping up their inside sales investment (Zoltners, Sinha, and Lorimer, 2013). Astra Zeneca, a global leader and biopharmaceutical company has replaced its field sales force support for its brand Nexium with a 300 professional inside sales team. IBM is continuously investing in social media training, tools and content to assist its inside sales people generate leads and manage account relationships (Monica, 2013; Zoltners *et al.*, 2013). Various industrial leaders such ADP, 3M, Abbot, Cisco, Dupont, EMC, FedEx, Hershey, HON Company, Level 3, LexisNexis, McGraw-Hill, McKesson, Oracle and Pfizer, all proficiently utilize inside sales teams (Krogue, 2012; Monica, 2013).

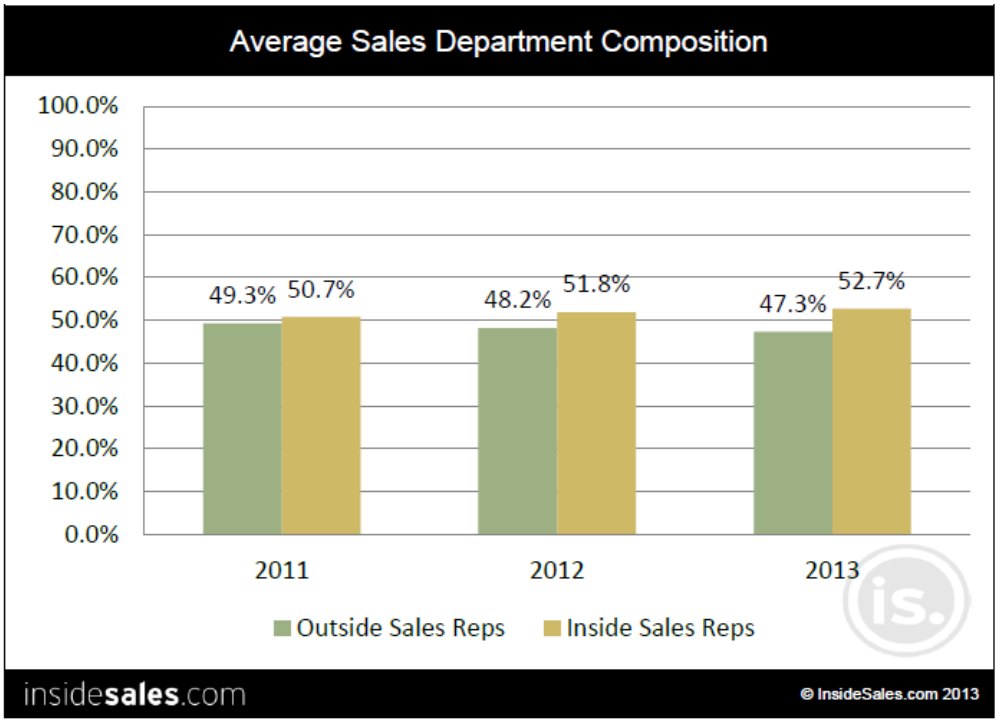

Figure 2: Inside Vs Outside Salesforce Growth (Warner, 2013) (INSIDESALES.COM)

The increase in the cost of running outside sales activities such as travel cost, and the pervasive use of IT have forced an increase in the utilization of inside sales programs to carry out routine sales task. This provided organizations with the opportunity to improve revenue by reducing sales force cost for each contact with an increased number of contacts per day and improved access and rapid response times for customers. Inside sales foster enhanced effectiveness through specialization of an industry's product or service within an extensive territory and clients. Managers can also better coach their sales force in an inside sales environment because they usually work within the same location which ultimately results in noticed improvements.

2.1.1. Review of Inside Sales Research

For over a decade now, the concept of inside sales has drawn the attention of practitioners. However, only few academic publications and practitioners' reports have studied its different facets and shed useful insights on this concept. Dickie and Trailer (2006) recognized how leveraging knowledge and information obtained from the internet about a prospect enhances the efficiency of inside sales activities, ultimately yielding a higher sales performance.

Gessner and Scott Jr (2009) recognized how predictive analytics, data mining, and other business intelligence tools support inside sales functions and help organizations to minimize costs, improve sales performance and optimally increase organizational profit. Their research acknowledged the importance of deploying inside sales strategies in today's challenging and competitive business environment. It compared the functionality of inside sales teams to their outside sales counterparts and established a notion that inside sales teams are more effective in maintaining rapport with existing customers. It also identified how business intelligence tools provide inside sales teams with a measureable goal to gauge when sufficient rapport has been developed with customers.

Ostrow (2009; 2011) approached this idea by identifying the emerging best practices for inside sales usage by organizations and provided frameworks for managers to assess their own management capabilities based on industry benchmark standards. The author was able to identify the degree to which inside sales are being adopted and their impact towards achieving organizational goals, the structure, effectiveness and efficiency derived from deploying inside sales initiatives and the benefits and use of inside sales to achieve and maximize revenue quotas.

Rapp *et al.* (2012) investigated how the inside sales force could use technological tools to facilitate sales by recommending technological essentials that can impact the ability of inside salespeople to act in a customer-oriented manner and enhance inter-functional coordination within a framework that includes customer relationship performance and increased financial outcomes. This study provided useful insights to sales managers who are interested in restructuring the sales function to take into account the potential cost savings emanating from using an inside sales force.

Inside sales are fundamentally metrics, process, and technology-driven and they use innovative technologies to engage and develop relationships with prospects and customers (Seley and Holloway, 2008). As seen, we have consistently affirmed the importance of IT in defining inside sales, this is because inside sales at a fundamental level must utilize one or more set of IT tools (e.g., CRM). It should be noted that many inside sales programs have failed to achieve their objectives because of inefficiencies introduced by poor CRM systems or related technologies that support the inside sales function (Marketo, 2008). Even with this insight, it is evident that not much has been done by researches to study how technology supports inside sales. Technology tools are vital for any inside sales setting, thus, it is important to understand how technology is used in inside sales and how it supports inside sales.

Next, we review sales technologies and their application in the inside sales environment.

2.2. SALES TECHNOLOGIES

The nature of work in today's sales-based organizations is changing (Rapp, Ahearne, Mathieu, and Rapp, 2010). The sales profession has experienced significant changes as a result of advances in IT, electronic commerce (e-commerce), and integration between different business units (Peterson, Rodriguez, and Krishnan, 2011). Sales technology refers to technological initiatives deployed by organizations to facilitate or enable the performance of sales tasks (Hunter and Perreault Jr, 2006). Sales organizations are constantly investing heavily in these technologies to help manage lead information, improve customer relationships, increase client communication and increase sales force productivity (Hunter and Perreault Jr, 2006). An array of these technologies used by sales personnel includes Sales Force Automation (SFA) and Customer Relationship Management (CRM). These technologies have the potential to streamline the selling process, allowing more sales activities to be achieved by fewer salespeople (Widmier, Jackson Jr, and McCabe, 2002). SFA and CRM are briefly described below.

> SFA *is the transformation of manual sales activities to electronic processes through the use of hardware and software all the way to fully integrating enterprise-wide information systems that allow sales personnel to communicate electronically with customers (Erffmeyer and Johnson, 2001).*
>
> CRM *is a management strategy that unites information technology with sales, marketing and customer service (Winer, 2001).*

Advances in IT represent a trend that is exerting a strong influence on sales-based activities (Rapp *et al.*, 2010). Sales technological tools (i.e., CRM and SFA) have enabled sales

representatives to leverage huge databases containing information about customer buying patterns, product sales patterns, competitors' products, and so forth to better focus and customize selling efforts (Ahearne *et al.*, 2007; Jones, Dixon, Chonko, and Cannon, 2005). The upsurge utilization of mobile and communication technologies by customers is providing sales personnel with a larger and more accessible customer base.

In addition, the internet has made available a variety of data and information needed to facilitate the selling process. Information comes not only from consultants, but from thousands if not millions of platforms on the Web. The internet technology has dramtically changed the model in which organizations used to acquire and contact their customers to a more sophisticated model in which consumers are simultaneously the initiators and recipients of information exchanges. Mobile devices, computing power, faster and more available bandwidth, electronic mail (e-mail), websites, webinars and social networking sites, connected with the Internet are changing the pace and efficiency of communication in sales (Ferrell, Gonzalez-Padron, and Ferrell, 2010).

Numerous publications have identified the significance of sales technology in decreasing costs, enhancing communications (Ahearne *et al.*, 2008; Erffmeyer and Johnson, 2001; Ferrell *et al.*, 2010; Honeycutt Jr, 2005), increasing sales force efficiency (Buehrer *et al.*, 2005; Honeycutt Jr, 2005; Hunter and Perreault Jr, 2006) reducing sales cycle time (Buehrer *et al.*, 2005) improving organization and access to information (Ahearne *et al.*, 2007; Honeycutt Jr, 2005) and optimizing sales performance (Ahearne *et al.*, 2004; Ahearne *et al.*, 2008; Eggert and Serdaroglu, 2011; Hunter and Perreault Jr, 2006).

Next, we review exising literature that connected IT to sales perfomance.

2.2.1. The Impact of IT on Sales Performance

There is a sizable body of research work on the impact of IT on diverse aspects of sales performance. Schillewaert, Ahearne, Frambach, and Moenaert (2000) found relationships linking sales personnel usage of technology to their market knowledge, technical knowledge, customer targeting skills, adaptive selling, and their call productivity. They also suggested that sales personnel's usage of IT only advocates a small but significant portion of their sales performance.

Widmier, Jackson Jr, and McCabe (2002) research studied the inconsistencies existing between the well-known failure rates of SFA implementations and sales personnel perceptions of technology easing their jobs by grouping the influence of technology in the selling environment into six broad categories of sales functions. They collected data from field sales personnel to identify what sales activities are being affected by technology, what technology is being used, who is instigating the use of technology, and the productivity achievements from using sales technology. They found that the function where technology was most frequently used in sales is contact management.

Ahearne et al., (2004) proposed a Technology Performance Usage Model (TPUM) to identify usage levels of sales technology that optimally impact sales performance. They reported that CRM technology usage enhanced sales performance at the initial stage, but afterwards, that impact was not everlasting and in the long run had a disabling impact on sales performance. This finding has since then been drawn upon by numerous studies as a guide for sales professionals to know that technology acceptance in the sales force is just the first step in the right direction towards achieving optimal sales performance. This adds

to the significance of our study because their report emphasises the importance of discovering the right level of technology usage to optimize sales tasks.

In their survey to gain insight into salespeople's automation technology usage, Buehrer *et al.* (2005) found that increased productivity or efficiency was the main reason why salespeople use technology. (Robinson Jr *et al.*, 2005) learned that the use of technology indirectly affected sales performance through adaptive selling behaviors. Ahearne, Jelinek, and Rapp (2005) established that saving time and optimizing call schedules through the use of SFA tools increases sales personnel's ability to make more sales calls. This study also related the use of SFA tools to enhancing salesperson efficiency and effectiveness through appropriate user support and training.

Hunter and Perreault Jr (2006) proposed a theoretical model for sales managers to gauge returns on investments (ROI) in sales technology implementations by linking technology to performance outcomes through behavioural selling. Their research was able to validate that sales reps with enhanced technology orientations are better able to leverage information to impact key aspects of sales performance (i.e., they demonstrated smart selling behavior).

Peterson *et al.* (2011), in their research on CRM and Sales Pipeline Management, measured sales performance within a sales person's job functions based on a standardized comprehensive process, lead conversion rates, internal organizational collaboration, and average sales cycle time. Their findings confirmed the hypothesis that there is a positive relationship between CRM technology usage and sales opportunity management, as it fosters collaboration across departments, enhances higher accountability for lead closure.

However, their results disapproved their hypothesis that CRM effectiveness decreases sales cycle time.

Rapp *et al.* (2010) suggested technological essentials that can impact the ability of inside and outside salespeople to act in a customer-oriented manner and enhance inter-functional coordination within a framework that encompasses customer relationship performance and improved financial outcomes for organizations.

In conclusion, the majority of the reviewed literature has focused broadly on IT application in supporting field sales activities. However, our research seeks to explicitly focus on IT application to support inside sales activities.

Table 1: Summary of Key Literature on It Impact on Sales Performance

Author	Technology	Impact area	Key findings
Schillewaert, Ahearne, Frambach, and Moenaert (2000)	CRM	• Market Knowledge • Technical Knowledge • Customer Targeting Skills • Adaptive Selling • Call Productivity	Sales person's usage of information technology only advocates a small but significant portion of their sales performance.
Widmier, Jackson Jr, and McCabe (2002)	CRM, SFA and Communication Technologies	• Contact Management • Scheduling • Automated Sales Plans • Generating Proposals (Main areas among others)	Functions where technology was most frequently used in sales is "contact management"
Ahearne et al., (2004)	CRM	• Initial stages of sales percent to quota	CRM technology usage has a curvilinear impact on sales performance. Optimal technology usage is highly required.
Ahearne, Jelinek, and	SFA	• Reduced Sales Cycle Time	SFA tools enhanced salesperson efficiency

Rapp (2005)		• Optimized Appoinment Schedulling • Increased Sales Calls	and effectiveness through appropriate user support and training
Hunter and Perreault Jr (2006)	SFA and Sales-based CRM systems	• Internal Role Performance • Performance with Customers	Sales reps with enhanced technology orientations are better able to leverage information for planning and smart selling behaviors that in turn impact sales performance.
Ahearne, Hughes, and Schillewaert, (2007)	CRM	• Improved Targeting Abilities • Enhanced Presentation Skills • Increased Call Productivity	Sales person integration of IT into selling activities improved sales performance
Rapp (2008)	CRM and SFA	• Adaptive selling • Reducing effort	SFA impacts effort by reducing work hours, and CRM impacts adaptive selling behavior.
Eggert 2011	SFA	• Customer relationship • Internal coordination	SFA has an high impact on performance when used a customer relationship tool.
Peterson, Rodriguez, and Krishnan (2011)	CRM (Contact Management)	• Increased Collaboration Across Departments • Enhanced Accountability For Lead Conversion And Closure	There is a positive relationship between CRM technology usage and sales opportunity management. CRM effectiveness did not decrease sales cycle time
Rapp, Beitelspacher, Schillewaert, and Baker (2012)	eLearning	• Improved customer-orientation • Enhance inter-functional coordination	Customer relationship performance Improved financial outcomes for organizations

2.2.2. IT Application In Inside Sales

The significance of IT will continually be stressed upon in the sales environment as industrial competition and complexity in sales tasks continues to increase (Peterson *et al.*, 2011). IT tools (e.g., CRM) are specifically designed to help the sales organization meet its objectives in managing customer relationships (Haas, Snehota, and Corsaro, 2012). They allow sales professionals to utilize information about customers more effectively (Hunter and Perreault Jr, 2007) and help them save time and improve communication with customers (Schillewaert *et al.*, 2005). These tools have given salespeople the ability to utilize customer information and selling strategies to facilitate cross-selling and up-selling from inside the organization as well as communicate effectively with management, and organize sales-related activities.

In order to understand the application of IT in the inside sales, we reflect upon sales persons' responsibility time allocation (Sabnis *et al.*, 2013) and industry benchmark classification of inside sales activities (Ostrow, 2009, 2011) (See Figure 3).

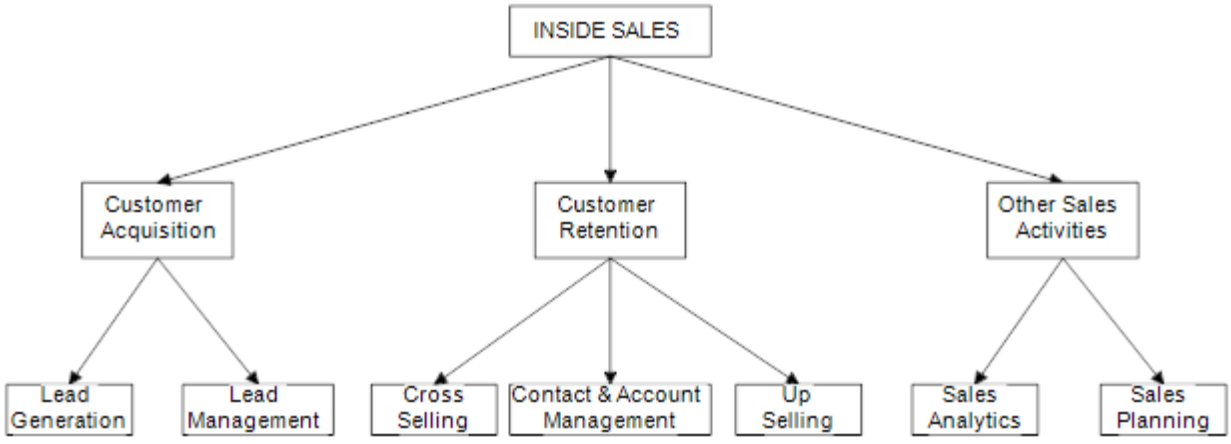

Figure 3: IT Application in Inside Sales

As represented in Figure 3, in customer acquisition, IT supports inside sales with tools to assist in customer prospecting to identify those who are potential candidates for sales. Although this is mostly perceived to be a marketing function, some inside sales organizations incorporate lead generation responsibilities into their programs. It also provides inside sales with the necessary tool needed to convert these generated leads into sales. It supports the inside sales functions with information of past and present interactions with existing customers for a better delivery of customized sales service for contact and account management. To nurture effective customer retention, IT tools such as CRM systems provide inside sales personnel with the necessary information they need to market and sell complementary and higher value products or services to their customers in cross selling and up selling in other maintain long time and valuable relationships with customers. Finally, it provides inside sales with the necessary tool needed in sales assessment for better sales planning and forecasting.

Our research focuses on improving lead management practices in inside sales using IT (Lead Management Systems). Customer acquisition is an integral part of any organization's success and effective lead management is the backbone of this process. In a survey of inside sales organizations, Ostrow (2009) found that lead management technologies were the most deployed technology, while a 2011 study revealed that customer acquisition was the activity most performed by inside sales personnel (Ostrow, 2011). Additionally, the 2013 Tech Marketing Barometer report revealed that lead management and campaign management systems were top technology investment areas (Maddox, 2013).

We now address the main theme of our research, namely lead management. But we must first comprehend what leads mean within a sales context and how they are collected.

2.3. LEADS

Monat (2011) defined a lead as a recorded expressed interest in an organization's product or service, regardless of whether that interest is from a new prospect or from an existing customer. Typically, it may possibly be a list of names, addresses, phone numbers, even the corporate buying needs of potential customers. It usually contains the basic information a salesperson needs to make that first contact with a potential customer (Griggs, 1997). Leads are classified as unqualified sales opportunities collected from campaign enquiries (i.e., trade shows, seminars, advertisements, purchases from external sources and other marketing campaigns) for the purpose of sales. The act of obtaining these leads is called lead generation.

2.4. LEAD GENERATION

Internet technology has provided various platforms for customers to search for products and services offered by organizations (Maser, 2007). This has dramatically changed the model in which organizations usually acquire information about their potential customers to a more sophisticated model in which consumers are simultaneously the originators and receivers of information exchanges. These organizations are able to leverage new and innovative online marketing campaigns to build their brand and generate leads online by keeping track of when a prospect considers something on their campaign programs. Customers can access an organization's website for product description and demonstration and might be asked a few questions (i.e., contact information and product requirement) upon access to this information. This information is then handed off to a sales

representative who will then contact these prospect customers with an attempt to convert them into valuable customers. Lead generation is an essential element of every organization that sells products or services (Monat, 2011).

A lot is spent on marketing to generate these leads through advertising, web campaigns and trade show efforts, however, the majority of these leads are ignored and never contacted by salespeople (Griggs, 1997; Vanillasoft, 2014). It is very important for sales and marketing to align themselves in achieving lead objectives (Ostrow, 2009). The marketing function creates awareness of a company's product and generates initial inquiries and it is up to the sales function to take these opportunities and translate them into first time or recurring purchases (Budds, 2004). We can safely acknowledge that marketing efforts in lead generation are worthless if leads are not properly managed. Therefore, we now review lead management.

2.5. LEAD MANAGEMENT

Lead management is the consolidation, prioritization, qualification and conversion of leads received from campaign management or other sources (e.g., service support process or sales generated leads) into first time or recurring purchases (Geib, Reichold, Kolbe, and Brenner, 2005). Lead management syndicates tools with techniques to support effective lead generation, management and tracking. It incorporates a well-organized set of processes and procedures that make certain all generated and qualified leads are pursued by sales. Table 2 shows the process involved in managing leads.

Table 2: Lead Management Process

Process	Descriptions
Enquiry Capture	Gathering request for information from prospect through marketing campaigns and web forms etc. Here, data and information required before making contact with a lead are collected.
Qualify Lead	This is the verification of a prospect's ability to make a purchase decision. A qualified sales lead according to Jolson (1988), is when the product or service can satisfy the prospect's needs, the prospect is willing to buy, and the prospect has the ability to buy.
Assign Leads	This is the allocation of leads to the appropriate inside sales person based on specific criteria, such as geographic region, product type, etc.
Score Leads	This is the grading or ranking of potential customers based on their likelihood to make a purchase decision. The score usually differs based on enquiry platform, product need, salesperson, geographical constraints and customer type.
Route Leads	Prioritizing and presenting the next best lead to call or follow-up on to the inside salesperson.
Nurture Leads	This involves fostering leads who haven't made purchase decisions yet through timely directed communications (i.e., email messages) until they grow up to prospective buyers.
Lead Tracking	Constant report on the sales leads status. It also includes providing statistical reports that allow marketing to evaluate return on investment for its different lead-generation programs.
Close Sales	At this point, the lead management process is completed. The objective of transforming a lead to a contact, first time or recurring purchases has been achieved.

Lead management is an important aspect of any sales organization's strategy. Yet, some difficulties are continually being met by sales organizations in lead management. Let us look at some key challenges of lead management in the inside sales industry.

2.5.1. Key Challenges in Lead Management

An important goal for sales organizations is for their sales representatives to increase their productivity. But still, sales representatives only tend to advocate fewer sales calls, which limit the chances of organizations to make sales. Most sales representatives have limited access to resources that could foster a standardized sales process to improve the quality of these calls or enhance the chances of converting leads to sales. Too often, inside sales reps have spent time researching accounts and finding names of prospects to call, in the process wasting valuable time that could be used to make additional calls.

Investment on marketing campaigns helps organizations generate massive amounts of leads. Upon capture, some of these leads are classified as "qualified" and "hot" based on the high chances to make a purchase. However, usually sales reps do not act on these leads on time, and as a result, these organizations lose these prospects. These leads need to be acted upon as soon as they are captured but research shows that most companies are not responding nearly fast enough (Phillips, 2013). An article in the March 2011 issue of the Harvard Business Review (HBR) reported on how long it took organizations to respond to a web-generated lead: 37% responded to their lead within an hour, 16% responded within one to 24 hours, 24% took more than 24 hours and 23% never responded. In addition, the average first response time of organizations that responded within a month was 42 hours (Oldroyd, McElheran, and Elkington, 2011).

Some leads are not sales ready yet, thus they need to be nurtured and constantly followed upon. However, inefficient lead follow-up has been a vital issue for sales organizations. Organizations are continually being faced with issues of little or no follow-up on leads passed on to their sales representatives. These organizations spend heavily to get these leads but statistics show that substantial ratios of leads are not acted upon by sales reps. Sales reps tend to make on average only 1.3 call attempts to a new lead before giving up, while an average 8-12 calls are needed to increase contact ratios (Krogue, 2012). In addition, a 2013 Dream Force lead response survey revealed that 40% of the surveyed organizations did not respond to their received web leads, and some of these leads were only contacted once (Phillips, 2013).

One main issue encountered by sales rep in lead management is the difficulty of prioritizing and selecting leads to contact. There is always that difficulty of knowing who may be a potential buyer and as a result a substantial amount of these leads are ignored. This problem is believed to be caused by a lack of or inefficient lead management systems (Griggs, 1997; Vanillasoft, 2014). Sales reps often select names they are conversant with, other sales rep use guesswork in lead selection, thereby fostering an inconsistent process that not only wastes time and reduces productivity but causes substantial ratios of leads to go to waste, which ultimately diminishes sales performance.

Next, we review key studies, their findings and suggestions for improving lead management practices that could well address some of the abovementioned challenges.

2.5.2. Improving Lead Management Practices

Few publications have paid serious attention to researching the best lead management practices that could address the problems discussed above. In a lead response management study, Elkington and Oldroyd (2007) identified when an inside sales representative should call a web generated lead for best connect ratios. Their findings, amongst others, indicated that Wednesdays and Thursdays are the best days to call to make contact with a lead and a qualified lead. 4pm-6pm is the best time to call to make contact with a lead, while 8am-9am and 4pm-5pm are the best times to call to qualify a lead. Additionally, the odds of calling a recently generated lead to qualify that lead decrease by over 10 times in the first hour, and the best odds are if the contact occurs within the first five minutes.

Sabnis *et al.* (2013) used a motivation, opportunity and ability (MOA) framework to propose how organizational lead prequalification and managerial tracking (motivation), marketing lead volume (opportunity), and sales personnel experience and past performance (ability) determine the follow-up of marketing and self-generated leads. Their findings showed that as sales personnel experience increases, their responses to managerial tracking of lead follow-up and marketing lead volume decrease, but responses to the quality of the lead prequalification process increase. In addition, as the sales personnel's performance increases, their response to the volume of marketing leads increases, however, their response to managerial tracking decreases. This research was able to recognize ethical strategies that organizations could put into consideration for effective lead management.

Unfortunately, to the best of our knowledge, no study has yet addressed the role of lead management systems and how well-organized lead management practices could drive

sales performance in the inside sales industry. We believe the challenges faced by sales organizations in lead management can be addressed by lead management systems. The processes and systems involved in resourcefully managing these leads are key determinants for sales triumph. As thus, organizations need comprehensive lead management systems built on best practices. The questions here are, "what are the key enablers of inside sales performance? And, what are the impacts of lead management systems on these enablers of inside sales performance?

2.6. LEAD MANAGEMENT SYSTEMS

Technology has increasingly enabled rich sales content delivery for inspired and appealing interactions with prospects. A lead management system collects, unifies, and organizes data and information about prospects based on integrated business rules to automate the lead management process. It encompasses key attributes of SFA and CRM technology. As an SFA tool, a lead management system automates sales activities of lead management by providing tools (Erffmeyer and Johnson, 2001; Moutot and Bascoul, 2008; Rivers and Dart, 1999) to support information flow and the execution of routine lead management tasks (Rapp *et al.*, 2008). As a CRM tool, it provides an interpretation of an organization's customer base (e.g., interaction and purchase histories) to support the objectives of managing customer relationships by making selling tasks more efficient (Ahearne *et al.*, 2008; Rapp *et al.*, 2008).

Currently, lead management systems can be roughly classified into List-based and Queue-based systems.

- **List-Based Systems:** A list-based lead management system presents a sales representative with a long list of leads and it is upon him/her to filter and select which lead he/she wants to manage. Lead selection here relies heavily on the individual salesperson's decision making capability. When a salesperson is done with a lead, he/she goes back to the list to find the perceived next best lead to contact. Today, most software vendors develop and deploy lead management systems with a list-based routing platform, and as a result, it is the most commonly used lead management system by sales organizations.
- **Queue-Based Systems:** A queue-based lead management system uses predefined business rules and a configured workflow sequence to automatically filter and present a salesperson with the next-best lead to manage. When a salesperson is done with a lead and enters the result of the call, the system automatically assigns the next best lead to the salesperson to contact. The result of calls must be entered for the system to automatically determine when and if the lead should circulate back in sequence. This system allows organizations to implement a standardized workflow process for managing leads by salespeople and only allows a salesperson to work on the prioritized lead presented. Here, decisions on leads to manage by which salesperson is reliant on the system based on predefined business rules set by the organization.

Selection of the best lead to manage through a list-based system is like finding a needle in a haystack, yet most organizations utilize this platform. Conversely, most salespeople are not often self-reliant on a queue-based system to make decisions on leads they need to manage. This begs the question, how do List-based and Queue-based systems influence inside sales performance? Our research will try to recognize the impact of employing both lead

management systems (List-based and Queue-based) as well as gain a better understanding of how both approaches influence key enablers of inside sales performance.

In the next chapter, we reviewed sales performance and its key drivers to understand the relationship between lead management systems and sales performance.

CHAPTER THREE: CONCEPTUAL MODEL DEVELOPMENT

This chapter reviews key concepts to develop a conceptual model that explores the impact of lead management systems on key drivers of sales performance.

3.1. THEORETICAL BACKGROUND

Numerous studies have acknowledged the significance of IT in optimizing sales performance (e.g., Ahearne *et al.*, 2007; Ahearne *et al.*, 2008; Hunter and Perreault Jr, 2006; Rapp *et al.*, 2012). For instance, the impact of IT on sales performance can be seen through the Task-Technology-Fit (TTF) theory by Goodhue and Thompson (1995). This theory claims that individuals' use of IT affects their performance and that the performance benefits will be greater if the IT is properly utilized and fits the requirements of the task they support (Goodhue and Thompson, 1995, p. 213). See Figure 4 considered

This theory is considered appropriate because it helps our study to understand the link between IT usage and inside sales performance through the completion of the lead management task. In addition, this theory does not only deal with technology, task and individual characteristics, but also accommodates the assessment of individual attitudes and behaviors.

As seen in Figure 4, technology characteristics refer to any type of hardware, software and data tools used by individuals to enable their task. Task characteristics are activities carried out by individuals to convert input to output. Individual characteristics include behaviours, motivation and experience that support their use of IT. TTF is the extent to which an IT supports an individual in the execution of their task. Utilization is the way in which the IT is used to carry out the task. Performance impacts refer to the completion of the task by an individual.

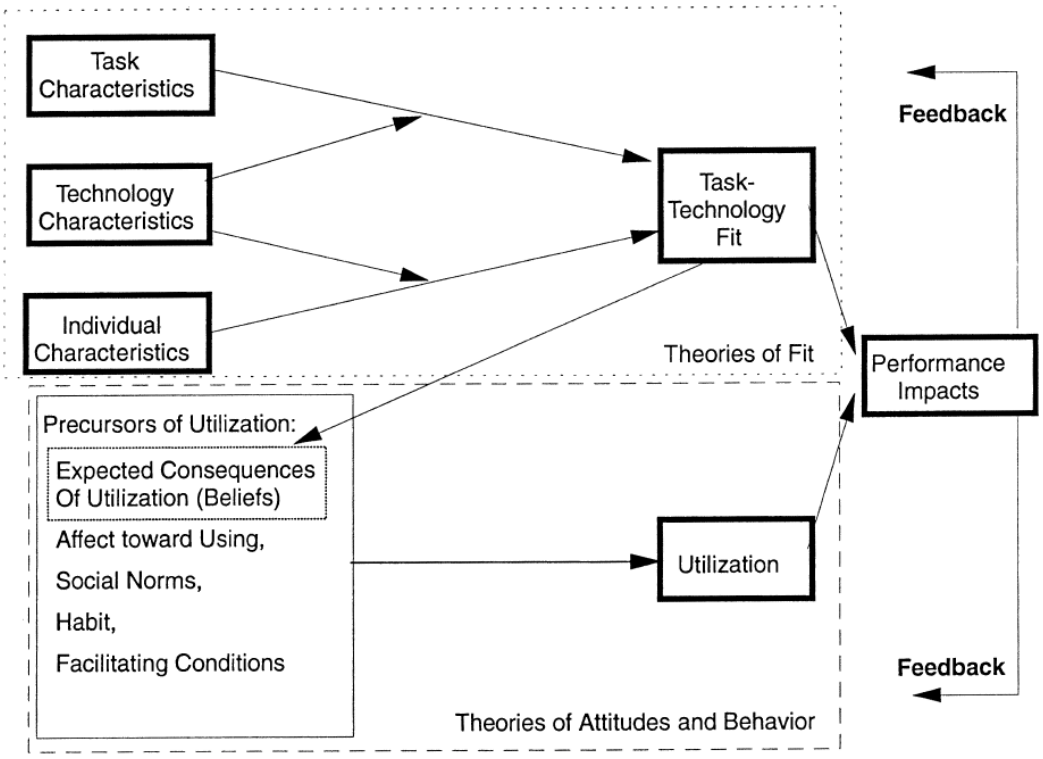

Figure 4: Technology-to-Performance Chain (TPC) Model (Goodhue and Thompson, 1995, p. 217)

The TTF theory has reconceptualised sales performance research. Sundaram, Schwarz, Jones, and Chin (2007) suggested that IT impacts sales performance by supporting a salesperson's administrative tasks (i.e., quality of the salesperson's call planning and time and expense management) and salesperson's ability to produce sales results. Rapp *et al.* (2008) argued that IT use for operational and analytical purposes affects a salesperson's performance through their behaviours (adaptive selling and effort). Ahearne *et al.* (2008) argued that IT does not influence performance directly, but rather through a variety of mediating factors, namely selling behaviour, task characteristics, and salesperson characteristics that occur during salesperson-customer exchanges.

Weitz (1981) suggested that a salesperson's performance effectiveness was impacted by their selling behaviour (i.e., adaptive selling), which was then moderated by a salesperson's characteristics (i.e., knowledge, motivation, skills, etc.), selling relationship characteristics and task characteristics. Churchill Jr, Ford, Hartley, and Walker Jr (1985) proposed six elements that determine the performance of a salesperson and ultimately sales performance: role variables, skill, motivation, personal factors, aptitude, and organizational or environmental factors. Weitz, Sujan, and Sujan (1986) argued that sales management variables (i.e., selling environment), salesperson characteristics and salesperson behaviour determined a salesperson's performance. Kohli (1989) argued that a salesperson's performance is impacted by variables that can be grouped in three categories: salesperson's characteristics and role perception, task characteristics, and supervisory behaviours. Finally, Verbeke, Dietz, and Verwaal (2011) identified five elements to predict sales performance: selling-related knowledge, adaptive selling, role ambiguity, aptitude, and work engagement.

This discussion implies that there are key factors that determine sales performance. Thus, to better assess the relationship between IT and sales performance we base our arguments on the technology-to-performance chain (TCP) model (Goodhue and Thompson, 1995 p.217) of the TTF theory. We classify the impact of lead management systems' usage on sales performance via mediators of task characteristics, selling behaviour and salesperson's characteristics. These mediating mechanisms can reflect the benefits of a lead management system and have previously been acknowledged in the literature as key determinants of sales performance (e.g., Weitz, 1981). These are briefly discussed below.

3.1.1. Task Characteristics

Tasks are activities performed by individuals to achieve outputs (Goodhue and Thompson, 1995). Studies have evaluated salespeople's tasks by measuring the effort a salesperson devotes to achieving sales objectives. Such effort is measured by the number of sales calls over the total time invested by the salesperson (Rapp, Ahearne, Mathieu, and Schillewaert, 2006; Rapp *et al.*, 2008; Sujan, Weitz, and Kumar, 1994), the persistency devoted to work, and continuing to try in the face of failures (Sujan *et al.*, 1994). An important representation of salespeople's efforts to realize their objectives is the activity through which they complete their tasks (Brown and Peterson, 1994; Rapp *et al.*, 2008). In our research, the basic activities associated with achieving lead management tasks include identifying profitable leads, making calls to leads and following-up on leads with calls, voicemails and emails. Hence, we characterize a salesperson's effort on lead management into *call productivity* and *effort on lead follow-up*.

3.1.2. Selling Behaviour

Plank and Reid (1994) defined selling behaviour as what people do during the execution of selling-related activities to aid the performance of their jobs. Two selling behaviours (adaptive and customer-oriented) have been investigated in the sales force research stream (Chakrabarty, Widing, and Brown, 2014; Franke and Park, 2006). The correlation between customer-oriented selling and sales performance is highly dependent upon long term buyer-seller relationship (Chakrabarty *et al.*, 2014; Saxe and Weitz, 1982). However, given that our research is related to a short-term customer acquisition activity (lead management), it may be difficult to get applicable data that can justify the relationship between the two variables, hence our research will not consider customer-oriented selling.

Adaptive selling on the other hand is very important in aiding the performance of the lead management process.

3.1.3. Salesperson Characteristics

A salesperson's characteristic has been conceptualized as a combination of a salesperson's selling-related knowledge, skills, attitude, role perception and motivation (Ahearne *et al.*, 2008; Churchill Jr *et al.*, 1985; Verbeke *et al.*, 2011). We believe that a combination of these factors reflects a "salesperson's competency**",** competency being a cluster of related knowledge, attitudes, and skills of a person, resulting in effective and/or superior performance (Lambert, 2009; Richard, 1982).

3.2. CONCEPTUAL MODEL DEVELOPMENT

3.2.1. Sales Performance

The discipline of sales has a long history of research on sales performance. Sales performance is the realized outcome from executing tasks, which may differ greatly across different types of selling jobs and situations (Walker, Churchill, and Ford, 1979). In earlier times, dollar or sales volume was the insightful way to conceptualize sales performance (Barker, 1999). However, with the growing significance of customer satisfaction, loyalty, customer knowledge and other crucial customer interaction aspects (Zallocco, Pullins, and Mallin, 2009), diverse concepts for sales performance were established. Behrman and Perreault Jr (1982) suggested that producing high market share, selling products with highest profit margins, quickly generating sales of new products, generating high levels of dollar sales, producing sales with long-term profitability, selling to major accounts, and exceeding annual sales objectives are significant reflections of sales performance. Anderson and Oliver (1987) conceptualized sales performance as the evaluation of salespeople

based on outcomes (e.g., revenue) and behavioural (e.g., salesperson competence) performance. Zallocco *et al.* (2009) synthesised previous studies and grouped sales performance into performance *effectiveness* and performance *efficiency*. They described efficiency as the ratio of selling output (close ratios) to selling input (sales calls), and effectiveness as a measurable salesperson contribution and skill-based behaviours to valued organizational outcomes.

We define sales performance as the degree of efficiency and effectiveness to which a salesperson achieves the objectives of lead management for an inside sales organization. Most inside sales organizations set numeric goals for their salespeople to accomplish within a specified time period. The nature of the goal to be achieved varies from an organization to the next. Typically, it can be revenue or sales volume based. For some inside sales organizations, it might be measured by the number of call dials advocated by a salesperson.

3.2.2. Call Productivity

For inside sales organizations, a call is an instance of speaking to a lead or attempting to contact a lead through the phone or Internet technologies with the intention of selling a product or service. Productivity (output over input) is the key measure of a salesperson's calling activity (Ahearne *et al.*, 2007; Sujan *et al.*, 1994) and is not limited to making lots of calls but making quality calls that could yield sales. As reported, most salespeople often dial to hit their daily call quota (Vanillasoft, 2014). Improved sales call productivity has been known to impact sales performance (Ahearne *et al.*, 2007; Rapp *et al.*, 2012; Zallocco *et al.*, 2009).

Hypothesis 1*: Call productivity positively affects sales performance*

3.2.3. Effort on Lead Follow-up

Sabnis *et al.* (2013) described lead follow-up as customer acquisition efforts on generated leads. It is the ability of a salesperson to closely pursue leads and to maintain contact with these leads until the close of sales or a lead is abandoned. Every lead is a potential sale, so salespeople need to work on every lead with persistency, consistency and speed (Elkington and Oldroyd, 2007). The earlier a lead is contacted after an enquiry, the more chances there are of converting it into a sale. Response time impacts lead qualification and ultimately sales. Prospects usually develop a high perception of an organization's product or service when salespeople quickly contact them after an inquiry. Lead follow-up increases conversion ratio, and improved lead conversion ratio is a core indication of enhanced sales performance. It also helps organizations to realize the full benefits of their marketing programs and reduce the number of leads that go to waste.

Hypothesis 2*: Effort on Lead follow-up positively affects sales performance*

Additionally, call productivity unquestionably increases lead follow up. By design, when inside salespeople make sales call, it increases their contact ratio and in so doing, signifies an effort they devote in to lead follow-up.

Hypothesis 3*: Call productivity positively affects effort on Lead follow-up*

3.2.4. Adaptive selling

This strategic selling approach involves the *"altering of selling behaviours during a customer interaction or across customer interactions based on perceived information about the nature of the selling situation"* (Weitz *et al.*, 1986, p. 175). Salespeople can use information gathered from customers to increase sales value and profits (Hughes, Le Bon, and Rapp,

2013) by modifying sales presentations strategies to fit individual customers' needs and preferences (Franke and Park, 2006) for the purpose of improving the likelihood of making a sale (Giacobbe, Jackson Jr, Crosby, and Bridges, 2006). The basis for adaptive selling behaviour comes from the fact that there is no single best way to sell, and therefore a good salesperson should be able to select, alter and implement a sales strategy based on the characteristics of the prospective customer and selling situation (Román and Iacobucci, 2010).

The sales and marketing literature provides general support for the relationship between adaptive selling and sales performance (Boorom, Goolsby, and Ramsey, 1998; Chakrabarty *et al.*, 2014; Franke and Park, 2006; Goad and Jaramillo, 2014; Hughes *et al.*, 2013; Hunter and Perreault Jr, 2006; Rapp *et al.*, 2008; Verbeke *et al.*, 2011; Weitz *et al.*, 1986). Adaptive selling behaviour explained about one-third of the variation in sales performance in (Giacobbe *et al.*, 2006). Chakrabarty *et al.* (2014) found that highly adaptive salespeople developed trust in their customers which in turn improved sales performance. Boorom *et al.* (1998), Franke and Park (2006), and Ahearne *et al.* (2008) found a direct positive relationship between adaptive selling and performance. Adaptive selling behaviour increases a salesperson's outcome performance, customers' feeling of satisfaction with the product and the salesperson (Román and Iacobucci, 2010). Finally, adaptive selling behaviour was ranked the second most significant driver of sales performance in Verbeke *et al.* (2011). Hence, we adapt to the growing body of research that has validated and is attempting to validate the positive relationship between adaptive selling behaviour and sales performance.

Hypothesis 4*: Adaptive selling behaviour positively affects sales performance*

3.2.5. Salesperson Competency

We define salesperson competency *"as the ability of a salesperson to effectively and efficiently carry out a sales task"*. Selling knowledge presentation, and targeting skills (Ahearne *et al.*, 2007) are important qualities in selling.

- **Selling Knowledge** symbolizes the quantity and richness of knowledge that salespeople use to advocate sales of an organization's product or service to help solve buyers' problems (Verbeke *et al.*, 2011). It comprises the technical and market knowledge of a salesperson (i.e., product uses, specifications, current market situations, etc.) (Behrman and Perreault Jr, 1982). Knowledgeable salespeople are conversant with their company's product or service and have an understanding of customer or prospect's needs and expectations (Rapp *et al.*, 2006).
- **Sales Presentation Skills** is "*a line of conversation that attempts to convince a lead, to initiate and or close a sale of the product or service"*. Salespeople are the link between organizations and their customers and prospects, and are responsible for giving clear presentations and answering customers' questions (Behrman and Perreault Jr, 1984). Sales presentations are important to persuade leads that an organization's products or services will fulfil their needs.
- **Targeting Skills** refer to the ability of a salesperson to identify and select leads with high interest, potential and ability to buy, thus increasing the chances to convert theses leads into sales (Ahearne *et al.*, 2007). A salesperson's ability to target leads that represent the greatest potential for sales is crucial for inside sales organizations. These organizations want their salespeople to make more calls but even better they want these calls to create business opportunities and yield sales.

To relate these competency traits to performance, Weitz *et al.* (1986) suggested that salespeople's knowledge and skills impacted their performance and overall effectiveness. Ahearne *et al.* (2008) found a positive relationship between a salesperson's knowledge and sales performance, while Verbeke *et al.* (2011) ranked a salesperson's selling-related knowledge the first driver of sales performance. Behrman and Perreault (1982) revealed that giving high quality sales presentations that deliver the right message to prospects is a crucial dimension of a salesperson's performance. Finally, Ahearne *et al.* (2007) found a positive relationship between a salesperson's targeting skills and sales performance. Hence, we posit that:

Hypothesis 5a*: A salesperson's competency positively affects sales performance*

Furthermore, studies found a positive relationship between salespeople's competency and their ability to effectively practice adaptive selling. Salespeople's selling knowledge affects the strategy they select to communicate and make sales presentations to buyers (Ahearne *et al.*, 2007). Salespeople with enhanced selling knowledge, presentation and targeting skills know who to approach, when and how (Verbeke *et al.*, 2011; Weitz *et al.*, 1986). A salesperson practicing adaptive selling leverages knowledge about customers to tailor unique solutions to situations (Weitz *et al.*, 1986). Hence we hypothesize that:

Hypothesis 5b*: A salesperson's competency positively affects their adaptive selling behaviour.*

Finally, Brown and Peterson (1994) suggested that effort signifies the force, energy or activity by which work is achieved. These are individual qualities of a salesperson and as

thus, the effort salespeople devote to following up on leads is highly impacted by the level of competency of that salesperson.

> ***Hypothesis 5c****: A salesperson's competency positively affects their effort on lead follow-up*

3.2.6. Usage of Lead Management Systems

Lead management systems use various IT tools to streamline and automate labour-intensive lead management processes. They support inside sales with the appropriate tools to interact with a higher volume of leads while sustaining quality conversations using background data about prospects delivered through CRM's marketing automation tools (Davis, 2013).

"IT can't increase or decrease the output of people's performance, only use of it can" (Orlikowski, 2000), and the use must be effective (Burton-Jones and Grange, 2013). We define *"usage of lead management systems" as the degree to which salespeople integrate lead management systems to carry out lead management tasks*. Usage refers to a de facto use of the lead management systems' potential.

Studies have connected IT and sales performance indirectly using mediators such as selling behaviours (Ahearne *et al.*, 2008; Hunter and Perreault Jr, 2006; Rapp *et al.*, 2008), task activities and salesperson competency (Ahearne *et al.*, 2007; Ahearne *et al.*, 2008; Goodhue and Thompson, 1995; Hunter and Perreault Jr, 2006; Rapp *et al.*, 2008). We therefore posit that the effective usage of lead management systems to carry out lead management activities is indirectly associated with higher performance via the mediators adaptive selling, call productivity, lead follow-up and salesperson competency.

Hypothesis 6*: The use of lead management systems does not directly affect sales performance*

The use of IT improves communications and enhances salespeople's productivity allowing salespeople to maintain direct contact with customers and prospects (Ahearne *et al.*, 2008; Buehrer *et al.*, 2005; Erffmeyer and Johnson, 2001; Ferrell *et al.*, 2010; Honeycutt Jr, 2005; Rapp *et al.*, 2006). This reduces the time salespeople spend on non-selling activities, saving time for them to make more sales calls (Ahearne *et al.*, 2007; Rapp *et al.*, 2008). Ahearne *et al.* (2005) suggested that effectual use of IT enables salespeople to increase their number of sales calls. It improves the quality of sales calls through efficient filtering of qualified leads. Inside sales organizations deploy lead management systems to increase the call productivity of their salespeople by making available telecommunication tools, sufficient customer data and a standardized workflow structure to support effective communications with leads, thereby keeping salespeople focused on lead management activities (Ahearne *et al.*, 2007; Goldenberg, 1996)

Hypothesis 7*: The use of lead management systems positively affects sales call productivity*

A major reason inside sales organizations deploy lead management systems is to ensure all captured leads are given attention and contacted promptly, systematically and constantly. Additionally, salespeople have access to up-to-date information about their leads, lead status report, leads that resulted in sales, leads that have not been worked and why they have not been worked. Using lead management systems enable salespeople to complete their lead follow-up tasks with less effort. It reduces the manually effort salespeople devote

to lead follow-up activities because of its automation capabilities making them spend less effort on time consuming activities i.e., planning sales call.

Hypothesis 8*: The use of lead management systems positively affects effort on lead follow-up*

The literature has recognized IT's role in supporting adaptive performance enhancing behaviours (Ahearne *et al.*, 2008; Hunter and Perreault Jr, 2007; Rapp *et al.*, 2008). To practice adaptive selling, a salesperson needs detailed information about the lead (i.e., personality, mood, etc.) (Porter, Wiener, and Frankwick, 2003). The utilization of customer information is important for salespeople in demonstrating adaptive selling behaviours (Rapp *et al.*, 2008; Weitz *et al.*, 1986) and lead management systems amalgamate the customer information needed to enable these adaptive selling behaviours. Salespeople can use crucial customer information to better organize and support an effective sales presentation (Ahearne *et al.*, 2008) tailored to a particular customer's need and wants (Rapp *et al.*, 2008). Thus, we suggest that lead management systems provide salespeople with the customer information they need to carry out selling adaptability.

Hypothesis 9: *The use of lead management systems positively affects adaptive selling behaviour*

To link IT usage and salesperson competency, it was confirmed that a salesperson's selling knowledge can be enhanced by providing information about sales and market situations for salespeople to use (Ahearne *et al.*, 2007; Rapp *et al.*, 2006). IT increases the richness and mobility of information (Jarvenpaa and Ives, 1994). A salesperson can search online databases and the Internet for intelligence, thus improving his/her knowledge of customer

needs (Ahearne *et al.*, 2005). Salespeople are able to sift through customer data and better focus on critical information, putting them in a better position to sell (Ahearne *et al.*, 2005). A lead management system supports the sourcing of relevant information and serves as a repository for salespeople to keep abreast of knowledge about business relationships. Unarguably, selling over the phone or online without face-to-face interaction can be difficult, thus inside salespeople need sophisticated tools to support their calls. IT allows rich sales content to be delivered during interactions with customers and prospects. Lead management systems support salespeople with information about market, product and the leads themselves. Salespeople who use such information during presentations can provide a logical business and financial justification for the sale, hence improving product value and ultimately increasing chances of sale (Ahearne *et al.*, 2007).

As for targeting, Ahearne *et al.* (2007) found positive relationships between salespeople's IT usage and their targeting skills. IT supports salespeople with the information needed to target the best leads at the best time. The enhanced visibility gained through the repository of information needed for contact and account management should motivate salespeople to properly select sales calls and only work on those they can justify, which should improve sales ratios.

> ***Hypothesis 10****: The use of lead management systems positively affects a salesperson's competency (selling knowledge, presentation and targeting skills)*

Based on the above, we propose a model (Figure 5) exploring the impact of lead management systems usage on sales performance via the mediators *selling behaviour*

(adaptive selling), *task characteristics* (call productivity and lead follow-up) and *salesperson characteristics* (salesperson's competency).

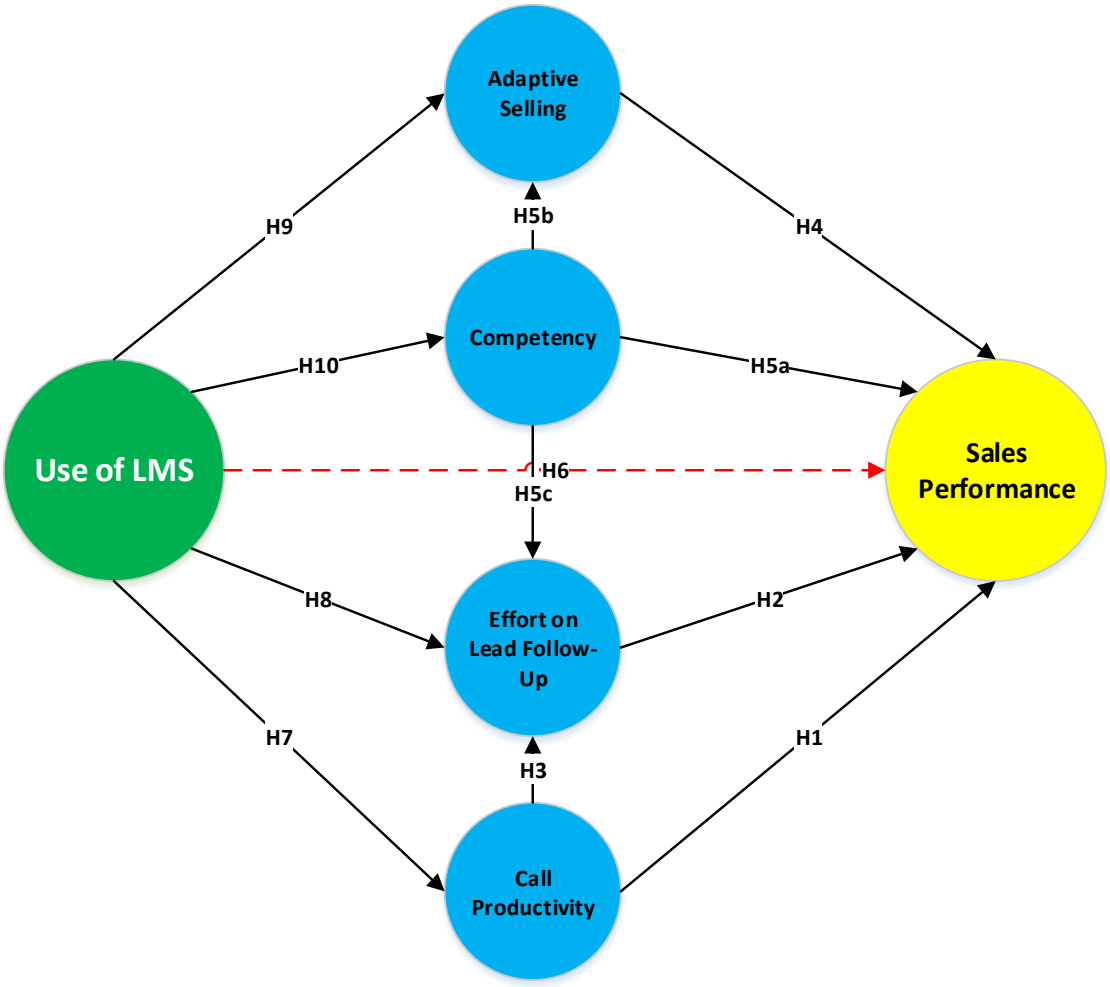

Figure 5: Conceptual Model

The next chapter discusses the research method followed in this study.

CHAPTER FOUR: RESEARCH METHODOLOGY

This chapter provides an overview of the research design and method employed for this study. First, we start by designing the measurement instrument for constructs in our model, and then we identify our sample population and method for data collection. Furthermore, we discuss the validation for our survey and finally, we discuss the technique and tools for our data analysis and reporting procedure.

4.1. RESEARCH DESIGN

A research design provides a detailed plan for data collection and the analysis methods designed to answer the research questions of the study (Bhattacherjee, 2012; Draper, 2004). Our study is designed to explore *the impacts of lead management system use on key drivers and inhibitors of sales performance*. Employing a positivist paradigm, a quantitative survey was conducted through an online survey to collect data required for testing research hypotheses. Data analysis was conducted using Partial Least Square Structural Equation Modelling (PLS-SEM).

A quantitative method using Partial Least Square Structural Equation Modelling (PLS-SEM) best supports our study because it helps us to validate our theories using empirical data. It also allows us to combine extant and new theories and test them in a single study. In addition, it helps to describe the properties of concepts in our model and recognizes the nature of relationships between these concepts.

4.2. MEASUREMENT FORMULATION OF CONSTRUCTS

Measurement involves quantifying a variable based on a set of rules (Hair, Wolfinbarger Celsi, Money, Samouel, and Page, 2011; Shi and McLarty, 2009). In Table 3 below, the

measurement table consists of constructs in our path-model, list of items to gauge each construct and measurement scales for these items. It provides a synopsis of how each construct in our path model should be measured. From left to right, the constructs are followed by their measures; the associated questions that were asked to measure each construct as well as the scales to obtain responses on these questions. Finally, the table provides sources from which these items were adapted.

Table 3: Measurement Items for Constructs

Concept	Constructs	Indicators	Measures	Scales	Sources Adapted
Sales Technology	Use of Lead Management Systems (LMS)	LMSU1	Follow-up on leads	**Seven point scale** 0 = "They do not use this technology at all", and 6 = "They use this technology to a great extent"	(Rapp *et al.*, 2008)
		LMSU2	Access product information		
		LMSU3	Access information about leads to adapt sales calls and/or presentation based on a leads specific need		
		LMSU4	Record lead contact information		
Selling Behaviours	Adaptive Selling	AS1	My salespeople use a variety of sales approaches	**Seven point Likert scale** 1= "Strongly disagree" and 7 = "Strongly agree".	(Robinson Jr, Marshall, Moncrief, and Lassk, 2002)
		AS2	My salespeople like to experiment with different sales approaches		
		AS3	When my salespeople feel that their sales approach is not working, they can easily switch to another sales		

			approach.		
		AS4	My salespeople try to understand how one lead differs from another		
Task Characteristics	Call Productivity	CP1	Please report, on average, how many calls each sales person makes per hour	**Numerical scale** 0 - 50	(Ahearne *et al.*, 2007)
	Effort on Lead Follow-Up	LFU1	On average, how many follow-up calls do your salespeople make with a lead before closing them out?	**Numerical scale** 0 - 20	(Elkington and Oldroyd, 2007)
		LFU2	Would you agree that your salespeople log every sales call?	**Seven point Likert scale** 1 = "Strongly disagree" and 7 = "Strongly agree".	
		LFU3	How fast do your salespeople contact a new lead?	**Seven point scale** 1 **=** "Very slow" and 7 = "Very	

					fast"	
Salesperson Characteristics	Competency	Presentation skills	PS1	My salespeople present information clearly and concisely to leads	**Seven point Likert scale** 1 = "Strongly disagree" and 7 = "Strongly agree".	(Behrman and Perreault Jr, 1982)
			PS2	My salespeople are very responsive in working out solutions and questions to leads		
			PS3	My salespeople identify, understand and address concerns of leads		
			PS4	My salespeople demonstrate the value of our product and service well		
		Selling knowledge	SK1	My salespeople are an excellent resource of competitive information		(Behrman and Perreault Jr, 1982)
			SK2	My salespeople have a lot of information on industry trends		

			SK3	My salespeople know all the specifications and applications of our products		
			SK4	My salespeople are excellent an source of information about their "product category"		
		Targeting skills	TS1	My salespeople constantly work on the highest priority leads first		(Ahearne *et al.*, 2007)
			TS2	My salespeople always call those leads that have high potential		
			TS3	My salespeople are very good at identifying, selecting and calling on profitable leads		
			TS4	My salespeople consistently call on leads that can provide the most business		
	Sales Performance		SP1	My salespeople produce		(Behrman

			high market share for our company		and Perreault Jr, 1982)
		SP2	My salespeople sell products with higher profit margins.		
		SP3	My salespeople produce sales with long term profitability		
		SP4	My salespeople exceed all annual sales lead management objectives for our company		

In addition to these items, we asked additional questions that helped to classify and represent our sample (i.e., what industry does your company represent?), and were measured using applicable nominal scales. (see Appendix A).

4.3. RESEARCH ETHICS

The main ethical concerns associated with our questionnaire are the participants' right to privacy, anonymity, security, voluntary participation, and their right to informed consent. The Ethics Board of the University of Ottawa approved our questionnaire before it was dispersed to participants (see Appendix B).

4.4. VALIDATION OF SURVEY

Most of the items used in the survey were adapted from previous studies that have explored similar constructs. This is a proven method for validating survey items (Bagozzi, 1994). The survey questions were repeatedly evaluated by the researcher's supervisors who have extensive experience in conducting surveys, and by industry practitioners (i.e., Vanillasoft) who provided insights on how the questions would be perceived by the respondents. This allowed for the survey to be repeatedly revised in terms of how the questions were worded and organized.

An initial study was piloted with a sample of 6 expert respondents from diverse inside sales industries to examine the items as well as the reliability and face validity of their scales. The pilot survey included forty four (44) items that we gathered during an in-depth review of the literature and an assessment of the practical work environment. An additional 6 items were included for demographic classification. All 6 expert respondents gave positive feedback and confirmed that they understood all items, that all items were applicable to

their industry and that the available scales were adequate. During the analysis, we gathered that some items allowed for missing and highly biased data. So we reassessed those items and replaced them with more reliable alternatives. Additionally, some scales were changed from one (1) to seven (7) and replaced with zero (0) to six (6) for logical reasons. At the end, a total of twenty eight (28) items were retained afterwards and all denoted their applicable constructs.

4.5. SAMPLING

Sampling involves selecting a representative of a population for the purpose of making observations and statistical interpretations about that population (Bhattacherjee, 2012). Our study requires data from sales managers, supervisors, and top-level executives of inside sales organizations using either list-based or queue-based lead management systems. VanillaSoft, our research partner, is an industry's leading software provider for sales by phone. VanillaSoft has access to the majority of the companies that use these systems because it offers "list-based" and "queue-based" systems for managing leads to small and medium size enterprises (SME). Using a random sampling approach, we selected 483 company contacts from diverse inside sales industries and of different managerial positions from VanillaSoft's database.

4.6. DATA COLLECTION

We collected data for this study in two (2) rounds. Firstly, we selected 300 potential participants from the database provided by Vanillasoft. On the 11th of December 2014, we sent out emails to these potential participants inviting them to participate in our survey. Having recognized that follow-ups can effectively increase response rate (Van der Stede,

Young, and Chen, 2005), a follow-up email reminder was sent out to these potential participants after one week.

After that, we could not send out additional invitation emails because most companies were closed for Christmas and New Year holidays. On the 7th of January 2015, when companies had resumed their business routine, we selected the remaining 183 potential participants and sent them an invitation email to participate in the survey. After a week, we followed up with an email reminder to the second group.

In total, we sent out 483 invitation emails. Majority was sent to companies in the North American region. Few companies in Australia, New Zealand, United Kingdom and Brazil were also sent invitation emails. The total duration for data collection was 6 weeks.

4.7. SAMPLE SIZE REQUIREMENT

PLS-SEM approach accommodates the use of relatively small sample sizes requirement. The rule of thumb is that the minimum sample size should exceed 10 times the largest number of formative indicators used to measure a particular construct, or 10 times the largest number of paths directed to a construct in the model (Hair Jr, Hult, Ringle, and Sarstedt, 2013). The construct with the most connected paths in our model is Sales Performance, which has five (5) paths. This means that our model requires a minimum sample size of fifty (50) in order to validate our research model.

4.8. MISSING DATA

Observations with missing values were completely deleted. This method of treating missing data is called listwise deletion and it is the most frequently used method (Bhattacherjee, 2012).

4.9. DATA ANALYSIS AND REPORTING PROCEDURE

We employed both descriptive and inferential statistics for our study. Descriptive statistics was used to organize and summarize the features of data gathered about the collected sample in graphical and numerical measures (Shi and McLarty, 2009). By employing descriptive statistics we provided the data analysis of the sample characteristics collected with the survey. Microsoft Excel 2010 was used for calculating and displaying the outcomes.

For our inferential statistics, we implemented Structural Equation Modelling (SEM), a second-generation data analysis method which tests the validities of statistical outcomes (Gefen and Straub, 2005). It enables further theory development by assessing and modifying theoretical models. We choose PLS-SEM using SmartPLS (Ringle *et al.*, 2005) to validate our model and statistically test our hypotheses.

4.9.1. PLS-SEM and Adoption Reasons

PLS-SEM is a component-based approach used to analyze hypothesized relationships in a path model (Urbach and Ahlemann, 2010). PLS is a nonparametric estimation procedure (Wold, 1982). We choose PLS-SEM for our study over other covariance-based SEM (CB-SEM) approaches because it allows this study to simultaneously investigate both measurement and structural models. Another reason for choosing PLS-SEM, is that it accommodates the small sample size of this study and also, it can process together the different measurement scales of this study (Urbach and Ahlemann, 2010; Wold, 1985). In addition, it allows us to use both reflective and formative measurement indicators in our model. Plus, the PLS approach was chosen for the analysis since it is recognized as a highly

appropriate approach at the earlier stages of a model development which is the case of this study.

4.10. PLS-SEM EVALUATION CRITERIA

PLS-SEM enables the validation of both measurement and structural models. The measurement models represent the relationships between constructs and their indicators, while the structural model represents the relationship between constructs in the path model (Diamantopoulos, 2006). Next subsection describes the assessment procedure used for in our study.

4.10.1. Evaluation of Measurement Models

Our study uses both reflective and formative indicators to estimate our constructs. For reflective measurement models, it is assumed that a latent variable causes the observed items, while for formative measurement models, the observed items cause a latent variable. In reflective models, the meaning of a construct does not change when an item is dropped (Jarvis, MacKenzie, and Podsakoff, 2003). Conversely, for formative models it is essential to include all significant concepts that form the construct, because dropping an indicator may alter the meaning of the construct. Most of our constructs are measured using reflective indicators with the exception to *Effort of Lead follow-up*, which is measured using formative indicators.

In evaluating the reflective measurement models, we adapted guidelines from existing literature. We first test for internal consistency reliability of constructs in our path model. We used Cronbach's alpha and Composite reliability. We assessed the reliability of construct indicators after which we checked for convergent and discriminant validity.

The evaluation criteria for reflective measurement models do not apply to formative measurement models. Internal consistency reliability is an inappropriate evaluation method for formative measurement models (Chin, 1998) because formative indicators are presumed to be completely reliable (Diamantopoulos, 2006). Additionally, the evaluation criteria for convergent and discriminant validity differ from what is used in reflective measurement models (Chin, 1998).

We evaluate the formative measurement models based on their indicator weights to identify their relative importance. We also check individual indicator for multicollinearity. Table 4 shows the evaluation criteria used for assessing reflective and formative measurement models.

4.10.2. Evaluation of Structural Model

In validating our structural model, we will first assess the significance of path coefficients using t-statistic values from a bootstrapping procedure using SmartPLS. We will further assess the coefficient of determination to identify the explained variance of the dependent construct in our path model. Additionally, we will check the effect size to determine the level of impact independent constructs have on the dependent construct in the path model. Finally, we will examine the predictive relevance of the structural model (See Table 5).

Table 4: Measurement Model Evaluation Principles

Reflective Measurement Models				
Test Type	**Test Criteria**	**Practical Rules**	**Description**	**References**
Internal Consistency Reliability	Cronbach's Alpha (CA)	→ Values should be above 0.70	This measures internal consistency reliability with a notion that all indicators of a construct are equally reliable. It assesses if all indicators measure the same construct.	(Chin, 1998; Cronbach, 1951)
	Composite Reliability (CR)	→ Value should be above 0.70	This measures internal consistency reliability of a construct as compared with other constructs in the model.	(Hair Jr *et al.*, 2013)
Indicator Reliability	Indicator loadings	→ Values should be above 0.7 → Values above 0.60 are acceptable in exploratory research designs or new measurement scales.	This measures how much variance of an indicator is explained by the target construct. It signifies the relationship power between indicators and their constructs.	(Chin, 1998; Gefen, Straub, and Boudreau, 2000; Henseler, Ringle, and Sinkovics, 2009; Hulland, 1999)
Convergent	Average	→ AVE should be above	It measures the degree of variance a	(Chin, 1998;

Validity	Variance Extracted (AVE)	0.50	construct captures from its indicators	Fornell and Larcker, 1981)
Discriminant Validity	Cross Loadings	→ The loadings of an indicator should be higher on its target construct than on any other construct.	This measures the distinctiveness of a construct from other constructs in the model by assessing an indicator's correlation with other constructs in the model.	(Chin, 1998)
	Fornell-Larcker Criterion	→ The AVE for each construct should exceed the squared correlation with any other construct	This measure of construct distinctiveness compares the square root of each construct's AVE with its correlation with other constructs in the model.	(Fornell and Larcker, 1981)
Formative Measurement Models				
Test Type	**Test Criteria**	**Practical Rules**	**Description**	**Reference**
Content Validity	Indicator specification	→ The indicators should fully define the target construct.	Measures if the indicators capture every aspect of the construct.	(Andreev, Heart, Maoz, and Pliskin, 2009; Diamantopoulos,

				2006)
Indicator Validity	Indicator weights and significance	→ The weight of indicators should be significant and preferably, should be above 0.1.	This assesses the significance of each individual indicator on the target formative construct	(Chin, 1998)
Indicator Collinearity	Variance Inflation factor (VIF)	→ VIF value should be lower than 5	This specifies how much of an indicator variance is explained by other constructs in the path model.	(Hair Jr *et al.*, 2013)

Table 5: Structural Model Evaluation Principles

Structural Model				
Test Type	**Test Criteria**	**Practical Rules**	**Description**	**Reference**
Model Validity	Significance of path coefficients	→ Values should be at least 1.96 at 5% significance level.	Measures if the hypothesized relationships between constructs in a model are statistically significant.	(Hair Jr *et al.*, 2013)
	Coefficient of determination (R^2)	→ R^2 values of 0.75, 0.50, or 0.25 are substantial, moderate, or weak respectively.	The R^2 value represents the pooled effects of other constructs on the dependent construct in the model.	(Hair Jr *et al.*, 2013)
	Effect size (F^2)	→ F^2 values of 0.02, 0.15 and 0.35 are low, medium and large respectively in effect.	The F^2 value tests if an independent construct has a substantial effect on the dependent construct in the model.	(Chin, 1998)
	Predictive relevance (Q^2)	→ Q^2 value should be above 0 to be predictively relevant.	The Q^2 assesses the predictive power for endogenous constructs in the model.	(Geisser, 1975)

The next chapter provides a detailed data analysis.

CHAPTER FIVE: DATA ANALYSIS

This section provides a representation of the analysis carried out in this study. This includes descriptive statistics to capture the demographics of participants and a model evaluation using PLS-SEM.

5.1. DESCRIPTIVE STATISTICS

At the close of the survey, we collected a total of 122 responses (25.3% response rate). Though, given that respondents were under no obligation to complete the entire survey, 14 responses were incomplete, leaving us with 108 valid responses. At that instant, we had enough data needed to validate our model.

5.1.1. Participants Demography

The respondents of our survey represented a variety of industries. Figure 6 shows the industry representation of respondents. On the high side, 26.9% and 15.7% of them represent telemarketing and business and professional services respectively. However, it is assumed that respondents who are in the telemarketing department of different industries selected telemarketing as their industry. Additionally, 8.3% are representatives of other industries (i.e., market research, wireless, consulting, analytics, etc.).

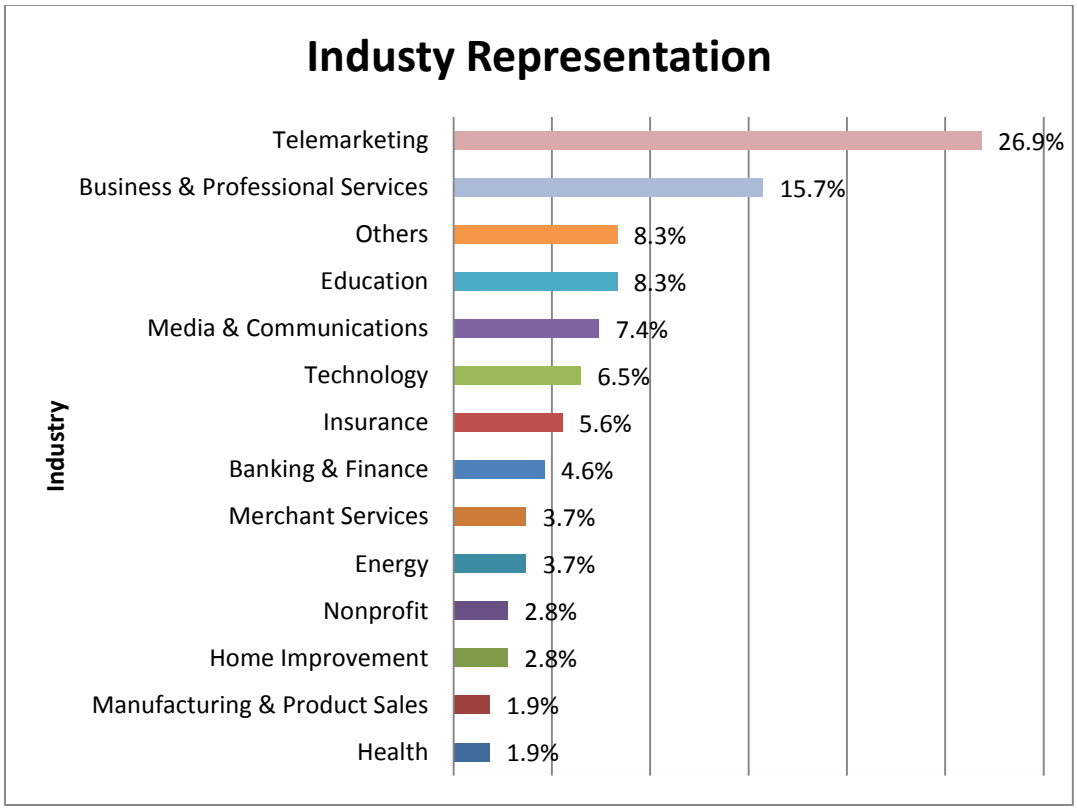

Figure 6: Industry Representation

As can be seen in Figure 7, 41% of our respondents are sales managers, 32% are top-level executives, 16% are administrative and support people, and 11% are uncategorized (i.e., account managers, high-ranking salespeople, sales advisors, etc.). This confirms the appropriateness of these respondents to our study. Based on Vanillasoft's archival data, it was confirmed that each sales manager or decision maker represents and average of ten (10) salespeople.

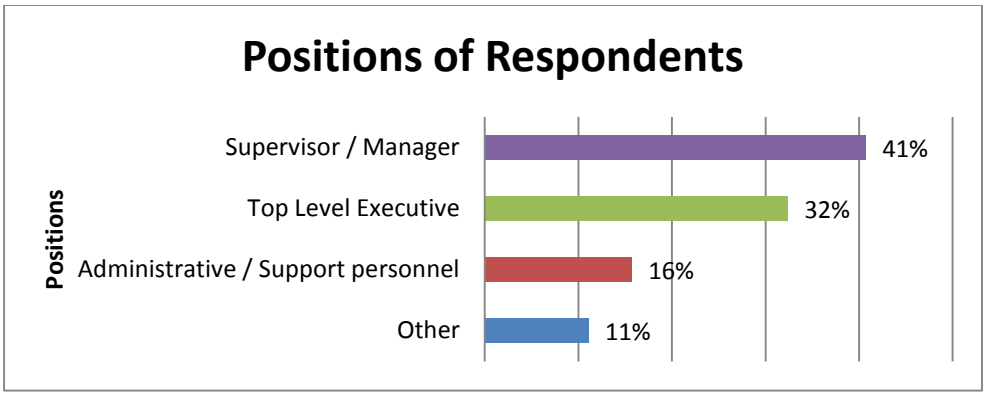

Figure 7: Position of Respondents

As shown in Figure 8 and 9, the majority of our participants are business-to-business (B2B) small and medium size companies. Over 62% of the respondents use B2B models. Additionally, 84.3% of the respondents come from small and medium size organizations.

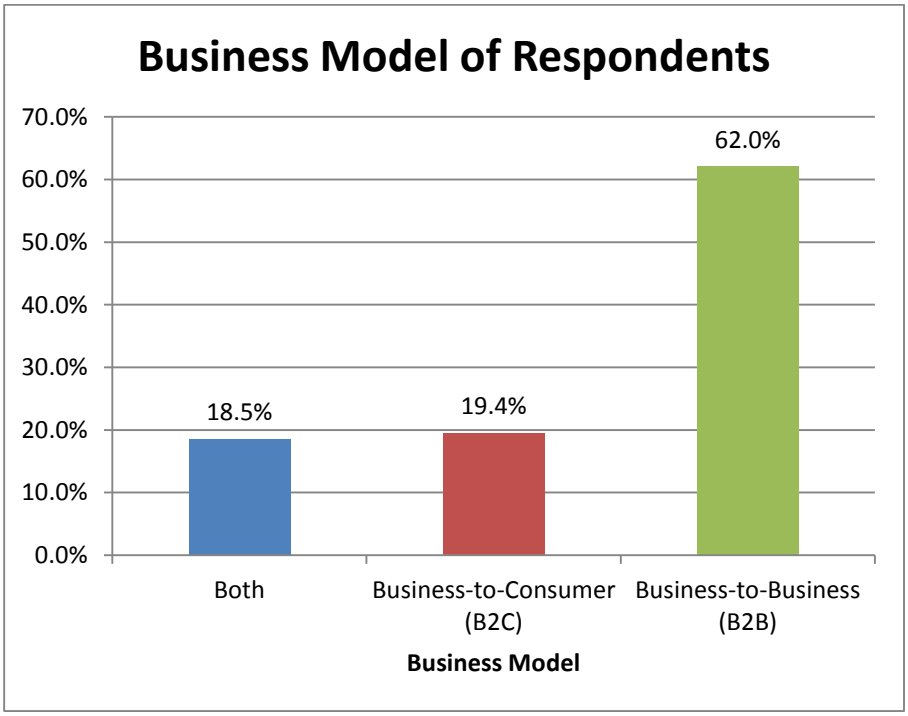

Figure 8: Business Model of Respondents

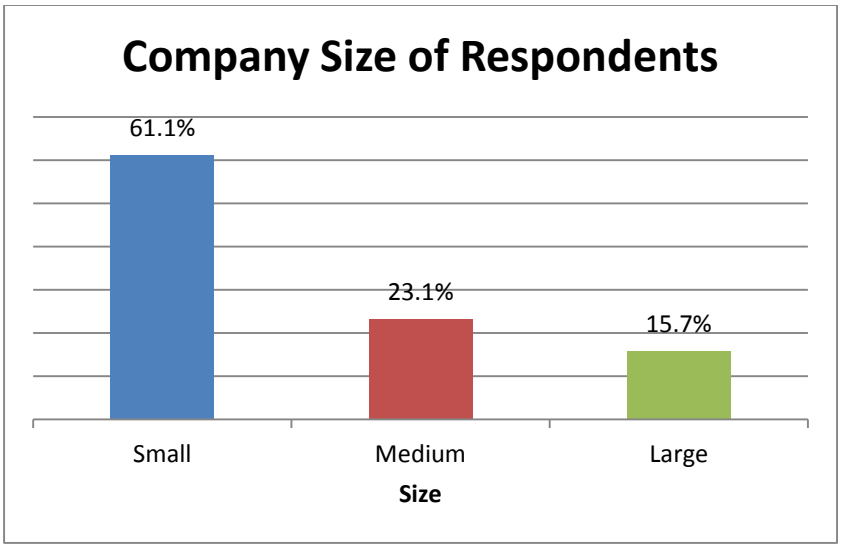

Figure 9: Company Size of Respondents

Finally, to further confirm the suitability of respondents to our survey, we asked to see if they were users of list-based or queue-based lead management systems (see Figure 10). The majority (82.4%) of our respondents are users of queue-based systems.

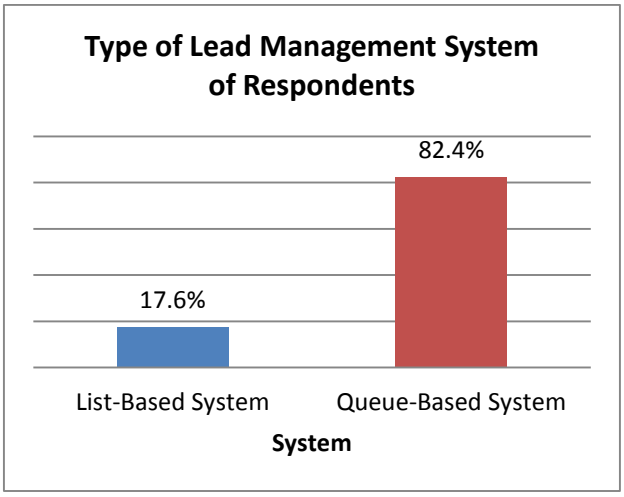

Figure 10: Type of Lead Management System of Respondents

5.2. MODEL VALIDATION

Using the quality criteria rules outlined in Table 4 and 5, we employed a two-phase approach to validate our model. The first phase evaluates the measurement models for reliability and validity of constructs, and the second phase evaluates the structural model to assess the relationships between constructs in the path model (Hair Jr *et al.*, 2013; Henseler *et al.*, 2009). In addition, we conducted an individual analysis of just the queue-based dataset of both the measurement and structural models to explore changes in the outcome.

5.2.1. Reflective Measurement Model Validation

Our model consists of both reflective and formative measurement models. We followed Hair Jr *et al.* (2013) reflective measurement model validation guidelines. We tested our reflective measurement model for internal consistency reliability, indicator reliability, convergent and discriminant validity.

5.2.1.1. Internal Consistency Reliability

In evaluating the reflective measurement models, we first tested the internal consistency reliability of constructs in our path model. We used Cronbach's alpha (CA) and Composite reliability (CR). Table 6 shows that all our reflective constructs have internal consistency reliability. Values are above 0.785 and 0.861 for CA and CR respectively. Both scores are above the recommended the 0.7 required levels (Chin, 1998; Cronbach, 1951) .

Table 6: Internal Consistency Reliability Statistics

Construct	Cronbachs Alpha (CA)	Composite Reliability (CR)
Adaptive Selling	0.864	0.907
Call Productivity	1.000	1.000

Competency	0.916	0.929
Use of LMS	0.798	0.863
Sales Performance	0.785	0.861

5.2.1.2. Indicator Reliability

The reliability of an indicator relies on the inference that a construct should explain at least 50% of each of its associated indicator variance (Chin, 1998). The indicator loadings of our reflective constructs are well above the required 0.7 and statistically significant (Chin, 1998; Gefen *et al.*, 2000; Henseler *et al.*, 2009) with the exception of LMSU2, which is slightly below 0.7 but above 0.65 and statically significant (Hulland, 1999). This confirms the reliability of our indicators. Having met the criteria for internal consistency reliability and convergent validity, we chose to retain this indicator (Hair Jr *et al.*, 2013). (see Table 7).

Table 7: Indicator Loadings

Construct	Indicators	Loadings	t-Statistic	p-Values
Adaptive Selling	AS1	0.821	18.643	0.000
	AS2	0.865	23.607	0.000
	AS3	0.813	21.416	0.000
	AS4	0.866	28.516	0.000
Call Productivity	CP1	1.000	Single item construct	
Competency	PS1	0.882	28.403	0.000
	PS2	0.890	38.541	0.000
	PS3	0.877	24.896	0.000
	PS4	0.866	34.939	0.000
	SK1	0.881	30.107	0.000
	SK2	0.823	20.703	0.000

	SK3	0.866	24.854	0.000
	SK4	0.816	21.209	0.000
	TS1	0.796	17.435	0.000
	TS2	0.844	23.345	0.000
	TS3	0.850	18.310	0.000
	TS4	0.811	11.323	0.000
Use of LMS	LMSU1	0.814	11.299	0.000
	LMSU2	**0.685**	5.910	0.000
	LMSU3	0.803	11.942	0.000
	LMSU4	0.824	11.579	0.000
Sales Performance	SP1	0.873	46.115	0.000
	SP2	0.724	7.918	0.000
	SP3	0.759	11.667	0.000
	SP4	0.757	14.195	0.000

5.2.1.3. Convergent Validity

Here, we used average variance extracted (AVE) to assess convergent validity of our reflective measurement models. The criteria here is that the AVE of each construct should explain over 50% of their indicator variance. The test shows (see Table 8) that our reflective construct meet this criteria - the AVE values are all above 0.5 (Chin, 1998; Fornell and Larcker, 1981). Note that AVE is not an appropriate measure for Call Productivity because it is a single item construct with a fixed loading of 1.00.

Table 8: Convergent Validity of Measurement Models

Construct	AVE
Adaptive Selling	0.708
Call Productivity	1.000
Competency	0.522
Use of LMS	0.614
Sales Performance	0.609

5.2.1.4. Discriminant Validity

To assess the distinctiveness of constructs in our path model, we first used cross loadings test to check for an indicator loading on its target construct against its loading on other constructs. The principle here is that an indicator should load higher on its target construct that on any other construct in the path model. None of the indicators load higher on any construct other than the target one in our path model (see Table 9).

Additionally, we employed Fornell-Larcker criterion to further assess discriminant validity of our measurement model. Table 10 shows that the square root of the AVE of each construct exceeds the correlation with other constructs in the path model. Both Tables 9 and 10 demonstrate substantial discriminant validity of our measurement models. This analysis does not apply to formative measurement models.

Table 9: Indicator Cross Loadings

Construct	Indicators	Adaptive Selling	Call Productivity	Competency	Use of LMS	Sales Performance
Adaptive Selling	AS1	**0.821**	0.040	0.434	0.251	0.486
	AS2	**0.865**	0.126	0.276	0.193	0.444
	AS3	**0.813**	0.051	0.538	0.273	0.559
	AS4	**0.866**	0.059	0.379	0.215	0.523
Call Productivity	CP1	0.078	**1.000**	-0.024	0.120	0.074
Competency	PS1	0.332	0.078	**0.882**	0.081	0.418
	PS2	0.425	0.074	**0.890**	0.237	0.433
	PS3	0.464	0.101	**0.877**	0.214	0.507
	PS4	0.333	0.113	**0.866**	0.150	0.372
	SK1	0.358	-0.109	**0.881**	0.302	0.451
	SK2	0.372	-0.091	**0.823**	0.339	0.511
	SK3	0.144	-0.170	**0.866**	0.214	0.295
	SK4	0.266	-0.120	**0.816**	0.200	0.360
	TS1	0.373	-0.039	**0.796**	0.122	0.420
	TS2	0.395	-0.010	**0.844**	0.120	0.390
	TS3	0.479	-0.019	**0.850**	0.283	0.368
	TS4	0.353	-0.068	**0.811**	0.424	0.458
Use of LMS	LMSU1	0.210	0.133	0.257	**0.814**	0.267
	LMSU2	0.111	0.058	0.111	**0.685**	0.124
	LMSU3	0.185	0.099	0.247	**0.803**	0.243
	LMSU4	0.319	0.071	0.292	**0.824**	0.207
Sales Performance	SP1	0.528	0.079	0.558	0.216	**0.873**
	SP2	0.394	-0.009	0.373	0.176	**0.724**
	SP3	0.500	-0.037	0.352	0.148	**0.759**
	SP4	0.461	0.174	0.482	0.328	**0.757**

Table 10: Construct Cross-Correlation Statistics: Fornell-Larcker Criterion

Construct	Adaptive Selling	Call Productivity	Competency	Use of LMS	Sales Performance
Adaptive Selling	**0.842**				
Call Productivity	0.078	**1.000**			
Competency	0.500	-0.024	**0.723**		
Use of LMS	0.283	0.120	0.310	**0.783**	
Sales Performance	0.606	0.074	0.576	0.281	**0.780**

5.2.1.5. Validating First-Order Measurement Models

This study used a Hierarchical Component Model (HCM) to model Competency. HCM is a higher-order structure that contains layers of constructs (i.e., first-order constructs "Selling knowledge", "Presentation skills", and "Targeting skills") that are represented by a higher construct (i.e., second-order construct "Competency") (Hair Jr *et al.*, 2013). It should be noted that these first-order constructs are not estimable within the model but are rather accounted for by the second-order construct. The type of HCM model used in our study is a reflective-formative type measurement. This implies that the relationship between first-order constructs and the second-order construct in the structural model is formative, and the measurement model is reflective (Hair Jr *et al.*, 2013; Ringle, Sarstedt, and Straub, 2012). See Appendix C for internal consistency reliability, convergent and discriminant validity of the first-order constructs.

5.2.2. Formative Measurement Model Validation

We tested our formative measurement model for content validity, indicator weights and significance level, and indicator multicollinearity (Andreev *et al.*, 2009; Hair Jr *et al.*, 2013).

5.2.2.1. Content Validity

Given the limited theoretical research in this field, we established content validity of our formative construct based on industrial practices.

→ **Effort on Lead Follow-up:** It is the ability of a salesperson to closely pursue leads and to maintain contact with these leads until the close of sales or a lead is abandoned. This construct is shaped by *persistency*, *consistency* and *immediacy (Elkington and Oldroyd, 2007; Phillips, Elkington, and Krogue, 2014; Vanillasoft, 2014)*. *Persistency* refers to how many times salespeople attempt to contact a lead, *consistency* refers to the continuous update of information about contact information with leads, and *immediacy*, concerns how fast leads are first contacted by salespeople.

5.2.2.2. Indicator Validity

We used the SmartPLS bootstrapping procedure to obtain indicator weights and t-statistics for evaluating their significance. The weights of our formative indicators are statically significant except LFU2. We have empirical justification to retain these indicators (Hair Jr *et al.*, 2013) with the exception of LFU2. Nonetheless, given that *consistency* (LFU2) is an important aspect of effort in lead follow-up, and its removal would change the meaning of the construct, we therefore retain this indicator (Jarvis *et al.*, 2003). (see Table 11).

Table 11: Indicator Validity of Formative Measurement Models

Construct	Indicators	Weigh	t-Statistic	p-Values
Effort on Lead Follow-Up	LFU1	**0.287**	**2.071**	0.041
	LFU2	**0.191**	1.002	0.319
	LFU3	**0.906**	**8.612**	0.000

5.2.2.3. Indicator Multicollinearity

Subsequently, we used IBM SPSS to run OLS regression to obtain Variance Inflation Factor (VIF) scores for assess multicollinearity. We used indicators of effort on lead follow-up as independent variables and CP1 as the dependent variable to obtain the VIF scores for effort on lead follow-up. The VIF scores range between 1.004 and 1.077 (see Table 12). Since the VIF scores are below the 5 threshold (Hair Jr *et al.*, 2013), we therefore validate the absence of multicollinearity in our formative construct.

Table 12: Variance Inflation Factor Statistics

Construct	Indicators	VIF
Effort on Lead Follow-Up	LFU1	1.004
	LFU2	1.077
	LFU3	1.077

5.2.3. Structural Model Validation

To validate our structural model, we follow the guidelines of Hair et al., (2014). We also apply recommendations from existing research (Chin, 1998, Henseler et al. 2009).

5.2.3.1. Significance of Path Coefficients

Firstly, we run bootstrapping with 5000 re-samples to evaluate the significance of hypothesized path relationships in our model using t-statistic values. A relationship is said to be statistically significant in the structural model if the t-Statistic value is above 1.96 and 2.57 at 5% and 1% significance level respectively (Hair et al 2014). See Figure 11 and Table 13 for the significance of our hypothesized path relationships.

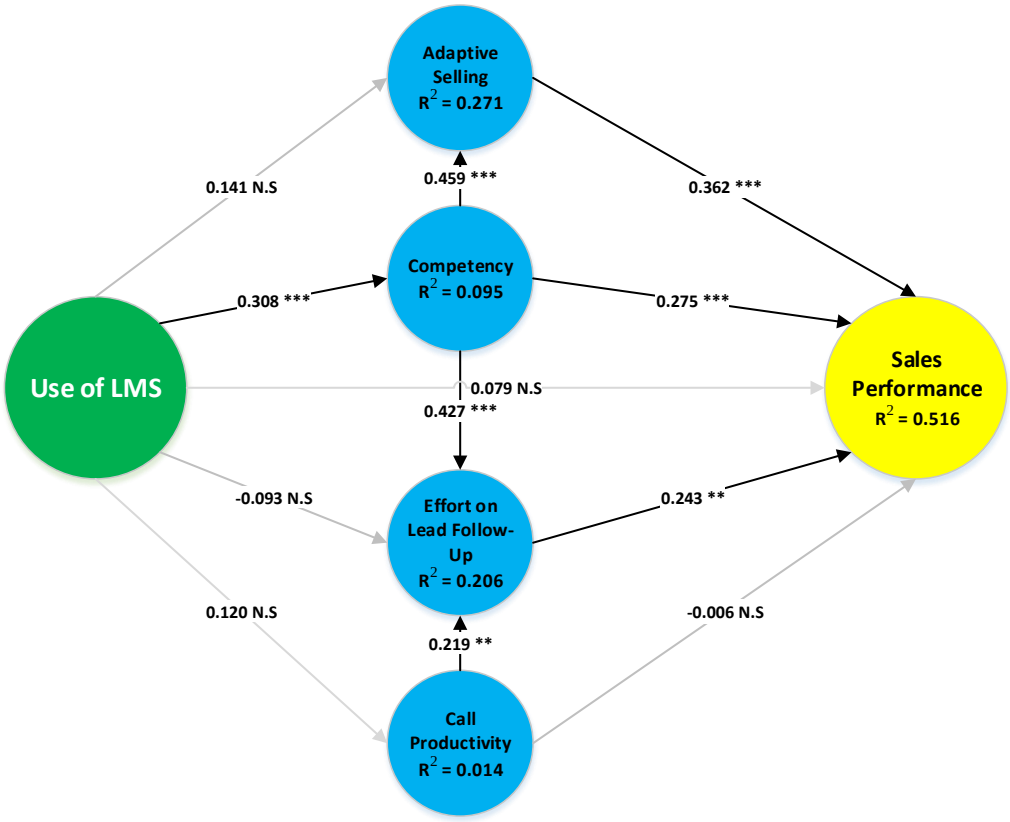

Figure 11: Structural Model Evaluation

Significant at 1% = ***, Significant at 5% = ** and Statically Insignificant = N.S

Table 13: Significance of Path Relationships

Hypotheses		Path Coefficient	t-statistic	p-value	Validation
H1	Call Productivity -> Sales Performance	-0.006	0.086	0.932	Rejected
H2	Effort on Lead Follow-Up -> Sales Performance	0.243	2.257	0.026	Supported
H3	Call Productivity -> Effort on Lead Follow-Up	0.219	2.268	0.025	Supported
H4	Adaptive Selling -> Sales Performance	0.362	3.382	0.001	Supported
H5a	Competency -> Sales Performance	0.275	3.092	0.003	Supported
H5b	Competency -> Adaptive Selling	0.459	5.842	0.000	Supported
H5c	Competency -> Effort on Lead Follow-Up	0.427	4.320	0.000	Supported
H6	Use of LMS -> Sales Performance	0.079	1.067	0.288	Supported
H7	Use of LMS -> Call Productivity	0.120	1.344	0.182	Rejected
H8	Use of LMS -> Effort on Lead Follow-Up	-0.093	0.722	0.472	Rejected
H9	Use of LMS -> Adaptive Selling	0.141	1.442	0.152	Rejected
H10	Use of LMS -> Competency	0.308	3.132	0.002	Supported

5.2.3.2. Coefficient of Determination (R^2)

We tested to see the level of the explained variance of the dependent construct (Sales Performance). Sales performance has an R^2 value of 0.516 (see Figure 11 and Table 14). This implies that the model explains 51.6% of the construct's variance. The test criteria here specifies that values of 0.75, 0.50 and 0.25 are considered substantial, moderate and weak respectively (Hair Jr *et al.*, 2013). Thus, the explained variance of the sales performance is considered moderate. Additionally, LMS usage and competency both explain 27.1% of adaptive selling variance, while call productivity, LMS usage and competency explain 20.6 % of effort on lead follow-up variance. LMS usage alone explains 9.5% of competency variance.

Table 14: Coefficient Determination Results

Construct	R Square (R^2)
Adaptive Selling	0.271
Call Productivity	0.014
Competency	0.095
Effort on Lead Follow-Up	0.206
Use of LMS	Exogenous
Sales Performance	0.516

5.2.3.3. Effect Size (F^2)

In order to identify the contribution of an independent construct on a dependent construct, we repeatedly carried out 10 PLS estimations, each time excluding an ascendant construct in our path model. According to Cohen (1988), F^2 values of 0.02, 0.15 and 0.35 are considered small, medium and large respectively. We calculated the F^2 by comparing the R^2 value of the dependent construct to its consequent using the following formula:

$$F^2 = \frac{R^2\ included - R^2\ excluded}{1 - R^2\ included}$$

Table 15 shows that adaptive selling has a medium effect on sales performance while competence and effort on lead follow-up all have a small effect. Competency and LMS usage have a medium and small effect on adaptive selling respectively. Also, call productivity and competency have a small and medium effect on effort on lead follow up respectively.

Table 15: Effect Size (F^2) Statistics

Sales Performance				
Construct	**R^2 included**	**R^2 excluded**	**F^2**	**Effect**
Adaptive Selling	0.516	0.432	0.174	Medium
Call Productivity	0.516	0.518	-0.004	-
Competency	0.516	0.469	0.097	Small
Effort on Lead Follow-Up	0.516	0.472	0.091	Small
Use of LMS	0.516	0.512	0.008	-
Adaptive Selling				
Construct	**R^2 included**	**R^2 excluded**	**F^2**	**Effect**
Competency	0.271	0.078	0.265	Medium
Use of LMS	0.271	0.253	0.025	Small
Effort on Lead Follow-Up				
Construct	**R^2 included**	**R^2 excluded**	**F^2**	**Effect**
Call Productivity	0.206	0.156	0.063	Small
Competency	0.206	0.040	0.209	Medium
Use of LMS	0.206	0.198	0.010	-

5.2.3.4. Predictive Relevance (Q^2)

To assess the predictive relevance of our structural model, we run a blindfolding procedure on SmartPLS. A structural model has a predictive relevance if the Q^2 values of all endogenous constructs in a path model are above zero (> 0) (Hair et al 2014). Table 16 below confirms that all endogenous constructs in our path model have predictive relevance as the Q^2 values of are above zero.

Table 16: Blindfolding Statistics for Predictive Relevance (Q2)

Construct	∑ SSO	∑ SSE	Q^2 Values
Adaptive Selling	432	358.627	0.170
Call Productivity	108	106.643	0.013
Competency	1296	621.811	0.520
Effort on Lead Follow-Up	324	298.827	0.078
Sales Performance	432	306.808	0.290

5.3. ANALYSIS OF QUEUE-BASED DATASET

82.4% (89) of our respondents report that they utilize a queue-based lead management system. The small sample of companies that implement list-based LMS does not allow conducting of cross comparison analysis of queue-based versus list-based LMS users. Hence it caused a difficulty to effectively achieve the third objective of our study. The third objective necessitates a comparison of the performance impacts of list-based and queue-based systems. However, a viable alternative is to run a cluster analysis of just queue-based systems and compare the outcomes with the whole sample. Cluster analysis is a statistical technique that categorizes responses that are similar into groups (Ketchen and Shook, 1996). We implement PLS-SEM with a dataset of 89 respondents who reported they use a queue based lead management system. The model passed all required tests for the reflective and formative measurement models. The results only differ slightly from the analysis presented for the complete dataset. See table 17 and 18 for an evaluation of the measurement model.

Table 17: Summary of Reflective Measurement Model Statistics

Construct	Indicators	Internal Consistency Reliability		Indicator Reliability			Convergent Validity	Discriminant Validity
		Cronbach's alpha (CA)	Composite Reliability (CR)	Loadings	t-Statistic	p-Value	AVE	
Adaptive Selling	AS1	0.859	0.903	0.813	13.914	0.000	0.701	Yes
	AS2			0.869	21.239	0.000		
	AS3			0.809	20.182	0.000		
	AS4			0.855	23.331	0.000		
Call Productivity	CP1	1.000	1.000	1.000	Single item construct		1.000	Yes
Competency	PS1	0.912	0.926	0.886	12.319	0.000	0.511	Yes
	PS2			0.901	15.217	0.000		
	PS3			0.857	10.156	0.000		
	PS4			0.829	15.061	0.000		
	SK1			0.894	12.376	0.000		
	SK2			0.827	9.882	0.000		
	SK3			0.857	9.053	0.000		
	SK4			0.818	13.023	0.000		
	TS1			0.767	7.638	0.000		
	TS2			0.843	11.881	0.000		
	TS3			0.841	11.021	0.000		

	TS4			0.806	6.462	0.000		
Use of LMS	LMSU1	0.782	0.858	0.814	20.931	0.000	0.602	Yes
	LMSU2			0.728	9.941	0.000		
	LMSU3			0.778	14.225	0.000		
	LMSU4			0.782	14.366	0.000		
Sales Performance	SP1	0.752	0.843	0.867	40.151	0.000	0.575	Yes
	SP2			0.671	5.793	0.000		
	SP3			0.713	8.054	0.000		
	SP4			0.768	12.729	0.000		

Table 18: Summary of Formative Measurement Model Statistics

Construct	Indicators	Weigh	t-Statistic	p-Value	VIF
Effort on Lead Follow-Up	LFU1	0.325	1.996	0.049	1.005
	LFU2	0.109	0.555	0.580	1.014
	LFU3	0.949	12.235	0.000	1.017

An estimation of the structural model revealed some crucial differences in path relationships and coefficient determination. Figure 12 and table 19 show that two initial non-significant path relationships are now statistically significant. Here, the relationship between the use of queue-based systems and sales performance is statistically significant (p<0.5). Also, the relationship between the use of queue-based systems and call productivity is statistically significant (p<0.5).

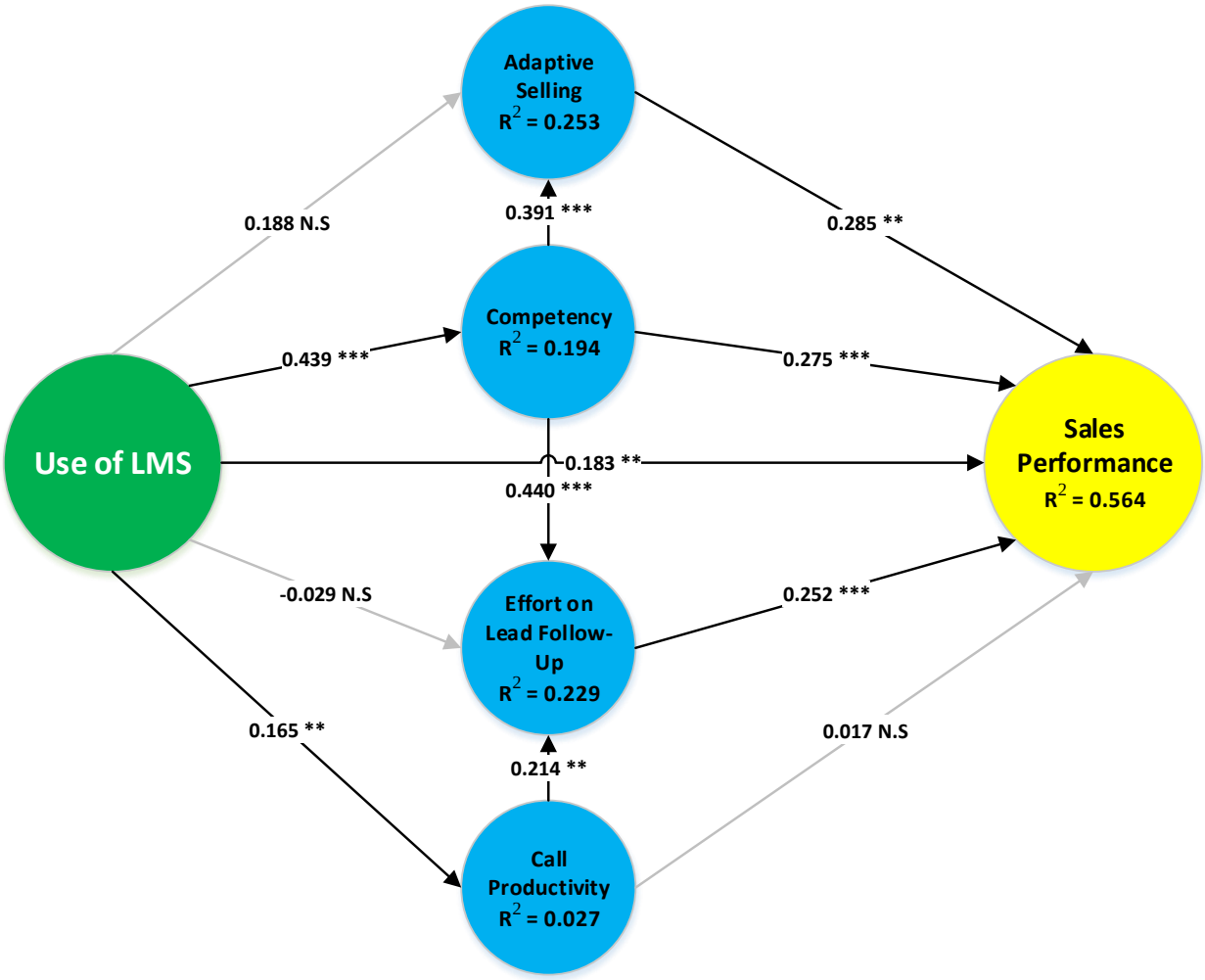

Figure 12: Queue-Based Structural Model Estimation

Significant at 1% = ***, Significant at 5% = ** and Statically Insignificant = N.S

Table 19: Significance of Path Relationships for Queue-Based

Hypotheses		Path Coefficient	t-Statistic	p-value	Validation
H1	Call Productivity -> Sales Performance	0.017	0.300	0.765	Rejected
H2	Effort on Lead Follow-Up -> Sales Performance	0.252	2.940	0.004	Supported
H3	Call Productivity -> Effort on Lead Follow-Up	0.214	2.034	0.045	Supported
H4	Adaptive Selling -> Sales Performance	0.285	2.332	0.022	Supported
H5a	Competency -> Sales Performance	0.275	2.972	0.004	Supported
H5b	Competency -> Adaptive Selling	0.391	3.552	0.001	Supported
H5c	Competency -> Effort on Lead Follow-Up	0.440	3.836	0.000	Supported
H6	Use of LMS -> Sales Performance	0.183	2.201	0.030	Rejected
H7	Use of LMS -> Call Productivity	0.165	2.070	0.041	Supported
H8	Use of LMS -> Effort on Lead Follow-Up	-0.029	0.213	0.832	Rejected
H9	Use of LMS -> Adaptive Selling	0.188	1.575	0.119	Rejected
H10	Use of LMS -> Competency	0.439	5.154	0.000	Supported

Here, the model explains 56.4% of the sales performance variance (see Figure 12 and Table 20). In addition, adaptive selling and effort on lead follow-up have explained variances of 25.3% and 22.9 % by their acendents respectively. Use of LMS explains 2.7% and 19.4% of call productivity and competency variances correspondingly.

Table 20: Coefficient Determination Statistics for Queue-Based

Constructs	R Square
Adaptive Selling	0.253
Call Productivity	0.027
Competency	0.194
Effort on Lead Follow-Up	0.229
Use of LMS	Exogenous
Sales Performance	0.564

For the effect size (F^2) analysis, we identified that the contribution of each independent construct on the endogenous construct in the model only differed slightly from the original analysis. The key difference here is that the Use of LMS has a small effect size on sales performance. In addition, all the Q^2 scores for endogenous constructs in our path model were above zero, see Appendix D. Also, refer to Appendix E for a complete model of both analyses.

Furthermore, we compared both systems using key performance indicators inspired by industry practitioners. Finally, we compared our clustered data (i.e., queue-based system users) against extant findings (i.e., list-based system users) on related factors (see Appendix F).

The next chapter discusses the findings and implications of our analysis.

CHAPTER SIX: DISCUSSION AND CONCLUSION

In this final chapter, we discuss the insights yielded by our quantitative analysis and explain how they relate to our research objective and questions. Finally, we identify the limitations of this research and provide recommendations for future research.

6.1. KEY FINDINGS AND DISCUSSION

The results of this study provide support for eight (8) of our twelve (12) hypothesized relationships (see Table 21). Essentially, we can now state that the use of lead management systems affects inside sales performance via improving salespeople's adaptive selling, lead follow-up effort and competency. Together, these variables explain more than a half the variance (51.6 %) of inside sales performance.

6.1.1. Sales Performance and Key Drivers

Contrary to previous research (Ahearne *et al.*, 2007; Zallocco *et al.*, 2009), our study found no correlation between call productivity and sales performance. A major reason for this could be the limited scope of our call productivity measure. We used number of sales call alone to mesure call productivity. In reality, a salesperson can make 10 sales calls in an hour, and only connect to one lead. Another salesperson might make 5 sales call and successfully connect to 3 leads. Hence, we believe that within a inside sales domain, call productivity should not be about the number of sales call made, but might consist of other factors that increase connect ratio and ultimately, sale of product or services.

This study provides support for the relationship between effort on lead follow-up and sales performance. This outcome is consistent with the inside sales industry's expectations on lead follow-up undertakings (Elkington and Oldroyd, 2007; Phillips *et al.*, 2014). This relationship can be justified with the fact that salespeople are more likely to close sales if

they consistently contact leads with persistentcy and immediacy (Elkington and Oldroyd, 2007; Phillips *et al.*, 2014; Vanillasoft, 2014). We also found a positive relationship between call productivity and effort on lead follow-up. Obviously, the number of sales calls made by salespeople is a key indicant of the effort they devote to lead follow-up. The remote nature of inside selling makes sales calls a significant interactive medium for completing the lead follow-up task.

The impact of adaptive selling behavior on sales performance has been previously tested and validated in the sales literature (Ahearne *et al.*, 2008; Chakrabarty *et al.*, 2014; Franke and Park, 2006; Hunter and Perreault Jr, 2006; Rapp *et al.*, 2008; Verbeke *et al.*, 2011). The result of our research confirms that adaptive selling has a moderate impact on sales performance, and is the most significant driver of sales performance in our empirical model. We believe this correlation is substantiated because when salespeople fit their sales approach to meet those specific needs of a lead, they increase the likelihood of closing a sale, while building effective relationship with the lead. Leads are more likely to buy from salespeople who they believe treat them uniquely and meet their needs.

This study shows that a salesperson's competency improves sales performance. This confirms our prediction that those salespeople who contact leads who provide the most business, demonstrate their company products and services well, and possess enhanced selling knowledge about their market and products tend to achieve higher performance than those with lower levels of knowledge and skills. Also, we found that the competency of a salesperson positively correlates with their ability to perform adaptive selling. To justify, we believe that only knowledgeable and skilled salespeople may understand the specific

needs of a lead and identify which sales approach to adopt with the lead. Lastly, our research confirms a strong relationship between competency and effort on lead follow-up possibly meaning that competent salespeople dedicate more effort to lead follow-up.

6.1.2. Impact of Lead Management Systems' Use on Sales Performance Drivers

To begin with, we measured the direct relationship between the use of LMS and sales performance (without mediating variables) and found a positive correlation. However, when we measured the indirect relationship between the use of LMS and sales performance (via mediating variables) we found no correlation between the two variables. This means that the impact of IT on performance is experienced through selling tasks, behaviors and characteristics which drive sales performance. As predicted, adaptive selling, competency and effort on lead follow-up mediate an indirect relationship between LMS usage and sales performance.

The use of LMS did not relate significantly to call productivity. Even though our empirical model showed that the use of LMS reduces labor-intensive effort, it lacked the appropriate statistical significance to theoretically substantiate this corellation. In reality, this indicates that the use of LMS automates lead follow-up activities, and in so doing reduces salespeople's effort spent on lead follow-up.

The literature suggests that the use of IT directly improves adaptive selling (Ahearne *et al.*, 2008; Rapp *et al.*, 2008), however, our study found that the impact of LMS on adaptive selling is enabled, in part, by the competency of the salesperson. We first assessed the direct relationship between the use of LMS and adaptive selling and found a statistically significant relationship. All the same, when we tried a mediated relationship via

competency there was no direct relationship between LMS use and adaptive selling anymore. This mediated effect can be justified by the fact that salespeople have to be skilled and knowledgeable to be able to effectively and flexibly apply the information they get from their LMS during interactions with leads.

Finally, the findings of this study show that LMS usage improves a salesperson's competency. This confirms our prediction and literature suggestions that LMS usage helps salespeople stay updated about their market knowledge, increase their ability to identify those leads who are most profitable and enhance their presentations.

6.1.3. Queue-Based Lead Management Systems

A cluster analysis of just the queue-based dataset (i.e., respondents using queue-based lead management systems) yielded an interesting outcome. Contratry to our prediction and initial outcome, the cluster analysis found that the use of queue-based systems directly (with mediating variables) increases sales performance. Interestingly, we found that the use of queue-based systems increased call productivity and was statistically significant, unlike our initail analysis. The use of queue-based systems also has more impact on effort on lead follow-up and competency than originally analyzed. Here, the use of queue-based systems, adaptive selling, effort on lead follow-up and competency explain a variance of 56.4% in sales performance as opposed to 51.6% of our initail analysis.

Table 21: Hypothesis Validation

Hypotheses		Validation	
		Complete Dataset R^2 = 51.6	Queue-based Dataset R^2 =56.4
H1	Call productivity *improves* sales performance	Rejected	Rejected
H2	Effort on Lead follow-up *improves* sales performance	Supported	Supported
H3	Call productivity *improves* effort on Lead follow-up	Supported	Supported
H4	Adaptive selling behavior *improves* sales performance	Supported	Supported
H5a	A salesperson's competency *improves* sales performance	Supported	Supported
H5b	A salesperson's competency *improves* their adaptive selling	Supported	Supported
H5c	A salesperson's competency *improves* their effort on lead follow-up	Supported	Supported
H6	Use of lead management systems has *no direct* impact on sales performance	Supported	Rejected
H7	Use of lead management systems *improves* call productivity	Rejected	Supported
H8	Use of lead management systems *decreases* effort on lead follow-up	Rejected	Rejected
H9	Use of lead management systems *improves* adaptive selling	Rejected	Rejected
H10	Use of lead management systems *improves* a salesperson's competency	Supported	Supported

6.2. THEORETICAL CONTRIBUTION

This study contributes to the growing body of technology-to-performance research of the TTF theory by presenting an empirical model validating the impact of the use of lead management systems on key drivers and enablers (as mediators) of inside sales performance. Basically, we adapted key theories developed in sales research and applied it to inside sales. The concepts we used were previously recognized in the related literature, however, these concepts have not been used in a study exploring sales performance. The outcome of our study offers vital theoretical implications.

To start with, we responded to the call for theoretical research on inside sales. Given a dearth of theoretical knowledge and understanding of inside sales practice, our research

provides an academic standpoint on the blooming nature of inside sales, and the key role IT plays in inside sales success. Lead management systems represent an important tool in the inside sales industry as they provide inside salespeople with information and communication capabilities in their interaction with leads.

Ahearne *et al.* (2008) suggested that call activity had a significant impact on sales performance. We treated call productivity with the same measure, but found no statistically significant relationship between the two constructs. As mentioned earlier, call productivity (output over input) is not limited to salespeople making lots of calls but making quality calls that could yield sales. Therefore, we suggest that within an inside sales domain, the relationship between these two variables is highly dependent on salespeople calling on the right leads with persistency, consistency and immediacy.

Prior sales literature has evaluated a salesperson's characteristics using single constructs of selling knowledge (Ahearne *et al.*, 2007; Verbeke *et al.*, 2011; Weitz *et al.*, 1986), presentation skills (Ahearne *et al.*, 2007; Behrman and Perreault Jr, 1982) and targeting skills (Ahearne *et al.*, 2007). We presented an all-encompassing construct using a higher-order model (competency) that summarizes these individual characteristics of salespeople. Although the construct did not capture every aspect of a salesperson's individual characteristics (i.e., experience, aptitude and motivation), we did measure the important aspects needed in acheiving the lead management task. Our fidings show that presentation skill is the most important of these competency traits.

Similarly, and contrary to numerous findings in assessing IT and adaptive selling relationship (Ahearne *et al.*, 2008; Rapp *et al.*, 2008), we found that the relationship

between IT and adaptive selling is strongly mediated by individual characteristics (competency) of salespeople. To the best of our knowledge, this intervening effect has not been previously tested. Hunter and Perreault Jr (2006) implemented a double direct effect relationship and suggested that sales technology orientation increased information effectiveness, and accordingly information effectiveness increased a salesperson's adaptive behavior. Lead management systems provide salespeople with information and tools for adaptive selling purposes, but how they apply it during their interaction with leads is highly dependent on their competency levels.

Finally, this study compared the outcome of the use of earlier (list-based) and newly developed (queue-based) lead management systems by carrying out a cluster analysis. We found that queue-based systems sustain more impact on sales performance drivers than list-based systems.

6.3. PRACTICAL IMPLICATIONS

The findings of this study provide industry practitioners with several strategic insights. For instance, we found that salespeople who effectively use lead management systems increase their sales performance through task efficiency, improved sales behavior, and enriched information-based skills and knowledge. Using lead management systems may help salespeople to keep abreast of their market and technical know-how. It also provides them with the proper tools to effectively demonstrate their products and services while sustaining quality conversation with leads. The information-based gains from lead management systems allow salespeople to better understand the needs and purchasing abilities of leads and how to better sell to those leads.

Additionally, our research suggests that salespeople who tailor their sales presentations to fulfill the needs of their potential customers are more likely to close sales and ultimately improve sales performance. Accordingly, inside sales organizations should hire capable salespeople who can effectively apply the information provided by their lead management systems during interactions with leads.

Also, we found that call productivity has no direct impact on sales performance but it, however, increased effort on lead follow-up, which in turn increases sales performance. This miplies that not only do salespeople now need to make many calls, but they need to make many contact attempts to the right leads with consistency and speed. We advise managers on the need to communicate to their salespeople the importance of speed in their lead follow-up effort. Our findings show that immediacy is the most important factor in lead follow-up as it triggers the impact of lead follow-up effort on sales performance. Contacting leads quickly after interest is shown allows salespeople to catch them at their highest point of interest, which could easily translate into sales.

Most importantly, inside sales organizations should leverage the benefits of queue-based systems to realize competency gains, task efficiency and enriched sales behavior. The use of queue-based lead management systems can help salespeople substantially increase the number of calls they make, increase their contact speed, increase phone contact attempts to leads, improve their contact ratio and lessen lead decay rate.

Finally, remote selling in today's rapidly evolving economy is becoming more complex. Salespeople need to devote additional effort, have persuasive and targeting skillsets, be very adaptive and equally knowledgeable about their leads, product category, and market

settings to successfully advocate sales in the inside sales industry. Thus, the use of lead management systems is a productive option for salespeople to integrate into their sales process. Inside sales managers looking to fully maximize the benefits of their technology investments should deploy lead management systems built with the finest practices, and, most importantly, they should make sure their salespeople use these systems effectively.

6.4. LIMITATIONS AND FUTURE RESEARCH

While this study makes significant contributions to the understanding of sales technology approaches in the inside sales practice, it poses few limitations that provide several opportunities for further research. Firstly, we used a convenience sampling procedure, as thus, our sample was represented by SMEs mainly in the North American region. This causes quite a restriction on generalizing our findings and their applicability across larger organizations in the inside sales industry. Also, the findings of this study are based on 108 sample size representation. Future studies should re-estimate our model with a larger sample size.

Secondly, in order to reduce response bias, we collected objective responses from sales managers and decision makers about their salespeople (i.e., how managers and decision makers perceive their salespeople's activities, behaviors, characteristics and performance). In doing so, we neglected the fact that aspects like the usage of LMS is better reported on by salespeople who use the systems. Therefore, response bias may still exist. However, collecting data from managers and decision makers allowed us to collect a single response that was reported for an average of 10. This is because each sales manager was responsible for an average of 10 salespersons.

Notably, we used a single item measure for call productivity. Although this method is acceptable, we perchance could have used a more comprehensive measure. As thus, we call on further research with an extensive conceptualization of call productivity.

After data collection, we gathered that 82.4% of our respondents used queue-based systems. As a result, we couldn't carry out a multi-group analysis of both lead management systems because of the uneven representation of list-based systems. Multi-group analysis is a proven statistical method for effectively comparing two or more groups in a study. We ended up carrying out a cluster analysis of only queue-based systems which only provides us with comparable outcomes of complete responses against a cluster group (queue-based systems). It will be interesting to see future studies collect evenly distributed data for both systems.

Finally, we believe that a valuable research can be conducted to investigate the mediated impact of social media between IT usage and sales performance. In reality, social media plays a key role in today's knowledge intensive and smart selling environment (i.e., how salespeople use social media to discover potential customer needs, or, identify priority leads).

This study was conducted to recognize the effect of using highly efficient lead management systems (list-based or queue-based) to improve sales performance drivers in the inside sales industry. After a detailed review of the related literature, we offered a conceptual model with concepts and a quantitative way to measure these concepts. We implemented PLS-SEM methodology to validate our model. Most of our hypothesized relationships were

supported and justifications were provided for the rejected hypotheses. We provided theoretical and managerial understandings of our findings.

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APPENDIX A: QUESTIONNAIRE

CONSENT FORM

Title of Study: How List-based and Queue-based Lead Management Systems Drive inside Sales Performance

Principal Investigator: Alhassan Abdullahi Ohiomah
Faculty of Graduate & Postdoctoral Studies
University of Ottawa

Supervisor: Prof. Morad Benyoucef
Full Professor
Telfer School of Management
University of Ottawa

Co-supervisor: Prof. Pavel Andreev
Assistant Professor
Telfer School of Management
University of Ottawa

Invitation to Participate: You are invited to participate in the above mentioned research study conducted by Alhassan Abdullahi Ohiomah under the supervision of Prof. Morad Benyoucef and Prof. Pavel Andreev. This project is funded by Mitacs and VanillaSoft Inc.

Purpose of the Study: This study is being carried out in fulfilment of the requirements for a Master's of Science in E-Business Technologies at The University of Ottawa. The purpose of the study is to compare lead management systems (List-based and Queue-based) to identify the one that is most efficient and best influences sales behaviors to drive optimum sales performance in the inside sales industry.

Participation: If you wish to participate in this study, please complete the following survey. Your decision to complete and return this survey will be interpreted as an indication of your consent to participate. The survey should take you approximately fifteen (15) minutes to complete. We would appreciate it if you complete the survey before December, 24 2014.

Risks: There are no risks anticipated with this research study.

Benefits: The findings of this research will educate sales representatives, sales managers, decision makers and inside sales organizations on the IT capabilities that best support their sales activities and enhance certain aspects of sales performance.

Confidentiality and Anonymity: The information that you will share will remain strictly confidential and will be used solely for the purpose of this research. The only people who will have access to the research data are the principal investigator and research supervisors. Results will be published in aggregated format. Anonymity is guaranteed since you are not being asked to provide your name or any personal information.

Conservation of Data: The survey data will be kept in a password protected computer in the research lab of the research supervisor at the University of Ottawa. Furthermore, the data will be conserved for five years, as per the guidelines of the American Psychological Association, at which time it will be destroyed.

Voluntary Participation: You are under no obligation to participate. Completion and return of the questionnaire by you implies consent. Given the anonymous nature of this survey, data cannot be withdrawn once submitted.

Acceptance: Please indicate if you agree or not to participate in the above research study conducted by Alhassan Abdullahi Ohiomah of the University of Ottawa, under the supervision of Prof. Morad Benyoucef and Prof. Pavel Andreev.

If you have any questions regarding the ethical conduct of this study, you may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5, Tel.: (613) 562-5387, Email: ethics@uottawa.ca

You can print and keep a copy of the consent form.

I have read and understood the above consent form and desire of my own free will to participate in this study.

- ❍ Agree
- ❍ Disagree

Q1 What Industry does your company represent?

- ❍ Banking & Finance
- ❍ Business & Professional Services
- ❍ Education
- ❍ Energy
- ❍ Health
- ❍ Home Improvement
- ❍ Hospitality, Travel & Tourism
- ❍ Insurance
- ❍ Manufacturing & Product Sales
- ❍ Media & Communications
- ❍ Merchant Services
- ❍ Mortgage
- ❍ Nonprofit
- ❍ Technology
- ❍ Telemarketing
- ❍ Other _____

Q2a What business model best describes your company?

- ❍ Business-to-Consumer (B2C)
- ❍ Business-to-Business (B2B)
- ❍ Both

Q2b What is the size of your company?

- ❍ 1 - 50 Employees
- ❍ 51 - 250 Employees
- ❍ 251 - 500 Employees
- ❍ Over 500 Employees

Q3 What is your position in your company?

- ❍ Administrative / Support personnel
- ❍ Supervisor / Manager
- ❍ Top Level Executive
- ❍ Other _____

Q4 What type of lead management system do your salespeople use?

- ❍ List-Based System (i.e., Your salespeople always go back to a list to select the next lead to contact)
- ❍ Queue-Based System (i.e., Your lead management system automatically serves your salespeople with the next lead to contact)

Q5 Please indicate the extent to which you agree with the following statements

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
Using our lead management system, my salespeople always go back to a list to select the next lead to contact	❍	❍	❍	❍	❍	❍	❍
Using our lead management system, my salespeople look through a list of leads and decide on which lead to contact next	❍	❍	❍	❍	❍	❍	❍
Our lead management system filters and presents the next lead for my salespeople to contact	❍	❍	❍	❍	❍	❍	❍
Our lead management system decides which lead my salespeople should contact next	❍	❍	❍	❍	❍	❍	❍
My salespeople can only contact the next lead served by our lead management system	❍	❍	❍	❍	❍	❍	❍

***Q6.* On a 6 star scale, please rate the extent to which your salespeople use the following capabilities of your lead management system**
(0 = "They do not use this technology at all", and 6 = "They use this technology to a great extent")

Business Intelligence Reporting	☆☆☆☆☆☆	0
Calendar & Appointment Setting tools	☆☆☆☆☆☆	0
Call Recording	☆☆☆☆☆☆	0
Call Routing	☆☆☆☆☆☆	0
Email Integrated CRM	☆☆☆☆☆☆	0
Preview Dialing	☆☆☆☆☆☆	0
Progressive Dialing or Predictive Dialing	☆☆☆☆☆☆	0
Scripting	☆☆☆☆☆☆	0
Team Selling	☆☆☆☆☆☆	0

Q7. On a 6 star scale, please rate the extent to which your salespeople use your lead management system to complete the following lead management activities
(0 = "They do not use this technology at all", and 6 = "They use this technology to a great extent")

Call leads	☆☆☆☆☆☆	0
Follow-up on leads	☆☆☆☆☆☆	0
Give quality presentations to leads	☆☆☆☆☆☆	0
Identify priority leads	☆☆☆☆☆☆	0
Access product information	☆☆☆☆☆☆	0
Access information about leads to adapt sales calls and/or presentations based on a lead's specific need	☆☆☆☆☆☆	0
Record lead contact information	☆☆☆☆☆☆	0

Q8 Please report, on average, how many calls each sales person makes per hour?

- ❍ 0 - 50+

Q9 Please report, on average, how many hours per week your salespeople work?

- ❍ 0 - 50+

Q10 Please report, on average, what percentage of dials made by your salespeople results in a connection with a live person (i.e., the number of calls answered to the total calls made)?

- ❍ 0% - 100% (5% interval)

Q11 Please report, on average, how many contact attempts (phone call, email, voicemail) per new lead do your salespeople make to connect before they abandon it?

- ❍ 0 - 20+

Q12 Please report, on average, how many follow-up contact attempts (phone call, email, voicemail) do your salespeople make after the first contact with a lead before closing it out?

- ❍ 0 - 20+

Q13 Please report, on average, what percentage of leads are called at least once?

- ❍ 0% - 100% (5% interval)

Q14 Would you agree that your salespeople log every sales call?

- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Somewhat Disagree
- ❍ Neutral
- ❍ Somewhat Agree
- ❍ Agree
- ❍ Strongly Agree

Q15 Please indicate how fast your salespeople make their first contact attempt with a new lead?

- ❍ Very Slow
- ❍ Slow
- ❍ Somewhat Slow
- ❍ Neutral
- ❍ Somewhat Fast
- ❍ Fast
- ❍ Very Fast

Q16a Do your salespeople work on real-time web-generated leads?

- ❍ Yes
- ❍ No

Q16b On average, how fast do your salespeople contact a real-time web-generated lead?

- ❍ 0 - 5 Minutes
- ❍ 6 - 10 Minutes
- ❍ 11 - 30 Minutes
- ❍ 31 - 60 Minutes
- ❍ 1 - 8 Hours
- ❍ 9 - 24 Hours
- ❍ 25 - 48 Hours
- ❍ 49 - 72 Hours
- ❍ 73 - 96 Hours
- ❍ 4-7 Days
- ❍ 1 Week+

Q17 Please indicate the extent to which you agree with the following statements about the selling adaptability of your salespeople

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
My salespeople use a variety of sales approaches	❍	❍	❍	❍	❍	❍	❍
My salespeople are flexible in the selling approach they use	❍	❍	❍	❍	❍	❍	❍
My salespeople like to experiment with different sales approaches	❍	❍	❍	❍	❍	❍	❍
My salespeople try to understand how one lead differs from another	❍	❍	❍	❍	❍	❍	❍
When my salespeople feel that their sales approach is not working, they can easily switch to another sales approach	❍	❍	❍	❍	❍	❍	❍

Q18 Please indicate the extent to which you agree with the following statements about the sales presentation skills of your salespeople

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
My salespeople present information clearly and concisely to leads	❍	❍	❍	❍	❍	❍	❍
My salespeople are responsive in working out solutions and questions to leads	❍	❍	❍	❍	❍	❍	❍
My salespeople Identify, understand and address concerns of leads	❍	❍	❍	❍	❍	❍	❍
My salespeople demonstrate the value of our product and service well	❍	❍	❍	❍	❍	❍	❍
My salespeople provide a lot of new information to leads	❍	❍	❍	❍	❍	❍	❍
My salespeople use established contacts to develop new leads	❍	❍	❍	❍	❍	❍	❍

Q19 Please indicate the extent to which you agree with the following statements about the selling knowledge of your salespeople

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
My salespeople are an excellent resource of competitive information	○	○	○	○	○	○	○
My salespeople have a lot of information on industry trends	○	○	○	○	○	○	○
My salespeople are well-informed about important events in our industry	○	○	○	○	○	○	○
My salespeople know all the specifications and applications of our products	○	○	○	○	○	○	○
My salespeople are an excellent source of information about their "product category"	○	○	○	○	○	○	○
My salespeople keep abreast of technical developments	○	○	○	○	○	○	○
My salespeople know and understand very well what "product users" are going through	○	○	○	○	○	○	○

Q20 Please indicate the extent to which you agree with the following statements about the targeting skills of your salespeople

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
My salespeople always call on those leads that have high potential	○	○	○	○	○	○	○
My salespeople constantly work on the highest priority leads first	○	○	○	○	○	○	○
My salespeople are very good at identifying, selecting and calling on profitable leads	○	○	○	○	○	○	○
My salespeople consistently call on leads that can provide the most business	○	○	○	○	○	○	○

Q21 Please indicate the extent to which you agree with the following statements about the performance of your salespeople

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
My salespeople produce high market share for our company	○	○	○	○	○	○	○
My salespeople sell products with higher profit margins	○	○	○	○	○	○	○
My salespeople identify and sell to major accounts	○	○	○	○	○	○	○
My salespeople produce sales with long term profitability	○	○	○	○	○	○	○
My salespeople meet all annual sales lead management objectives for our company	○	○	○	○	○	○	○
My salespeople exceed all annual sales lead management objectives for our company	○	○	○	○	○	○	○

APPENDIX B: ETHICS APPROVAL

File Number: 09-14-10 **Date (mm/dd/yyyy):** 10/08/2014

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

Ethics Approval Notice

Social Sciences and Humanities REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

First Name	Last Name	Affiliation	Role
Morad	Benyoucef	School of Management	Supervisor
Alhassan Abdullahi	Ohiomah	School of Management	Student Researcher

File Number: 09-14-10

Type of Project: Master's Thesis

Title: How List-based and Queud-based Lead Management Systems Drive Inside Sales Performance

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
10/08/2014	10/07/2015	Ia

(Ia: Approval, Ib: Approval for initial stage only)

Special Conditions / Comments:
N/A

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APPENDIX C: VALIDATING FIRST-ORDER MEASUREMENT MODEL

Table 22 below shows the internal consistency reliability and convergent reliability of the first-order constructs in our path model. The first order constructs are valid and reliable. Cronbachs Alpha and Composite Reliability are all above 0.84 and 0.89 respectively. The AVE is above 0.68.

Table 22: Internal Consistency Reliability of First-order Constructs

Construct	AVE	Cronbachs Alpha (CA)	Composite Reliability (CR)
Presentation Skills	0.773	0.902	0.931
Selling Knowledge	0.717	0.868	0.910
Targeting Skills	0.681	0.844	0.895

The first-order constructs have discriminant validity. The indicators load higher on their target constructs than they do on other constructs. The squared AVE of each constructs is all higher for each constructs than on the other. (see Figure 13)

Constructs	Presentation Skills	Selling Knowledge	Targeting Skills
Presentation Skills	0.879		
Selling Knowledge	0.559	0.847	
Targeting Skills	0.625	0.572	0.825

Figure 13: Discriminant Statistics for First-order Constructs

APPENDIX D: QUEUE-BASED CLUSTER ANALYSIS (SUPPLEMENTARY)

Table 23: Effect Size (F^2) Statistics of Queue-Based

Sales Performance				
Construct	**R^2 included**	**R^2 excluded**	**F^2**	**Effect**
Adaptive Selling	0.564	0.518	0.106	Small
Call Productivity	0.564	0.564	0.000	-
Competency	0.564	0.515	0.112	Small
Effort on Lead Follow-Up	0.564	0.522	0.096	Small
Use of LMS	0.564	0.540	0.055	Small
Adaptive Selling				
Constructs	**R^2 included**	**R^2 excluded**	**F^2**	**Effect**
Competency	0.253	0.126	0.170	Medium
Use of LMS	0.253	0.225	0.037	Small
Effort on Lead Follow-Up				
Constructs	**R^2 included**	**R^2 excluded**	**F^2**	**Effect**
Call Productivity	0.229	0.182	0.061	Small
Competency	0.229	0.078	0.196	Medium
Use of LMS	0.229	0.228	0.001	-

Table 24: Predictive Relevance (Q^2) Statistics of Queue-Based

Constructs	∑ SSO	∑ SSE	Q^2 Values
Adaptive Selling	356	302.688	0.150
Call Productivity	89	86.130	0.032
Competency	1068	963.389	0.098
Effort on Lead Follow-Up	267	248.826	0.068
Sales Performance	356	256.188	0.280

APPENDIX E: COMPLETE MODEL

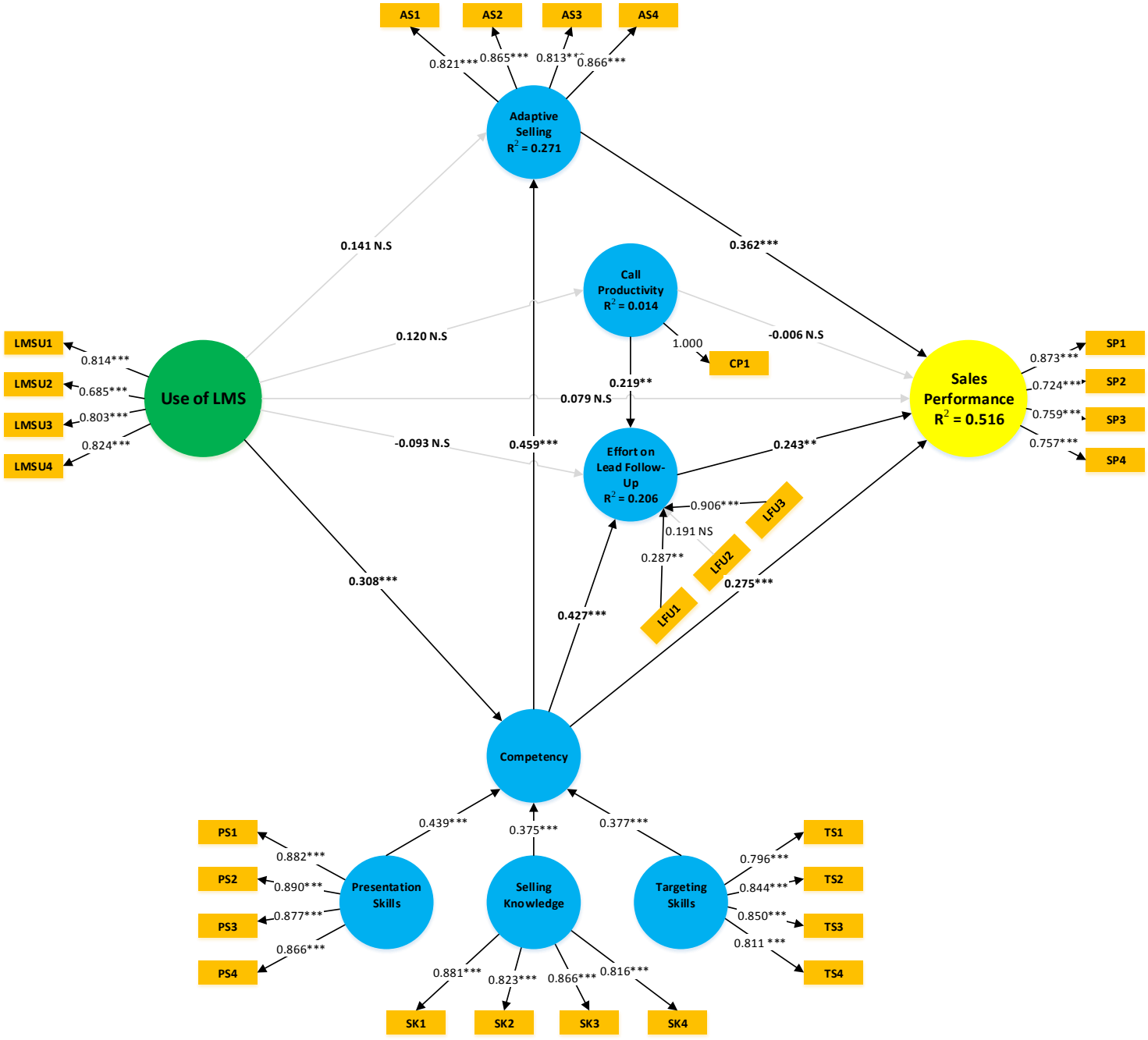

Figure 14: Complete Data Analysis Model

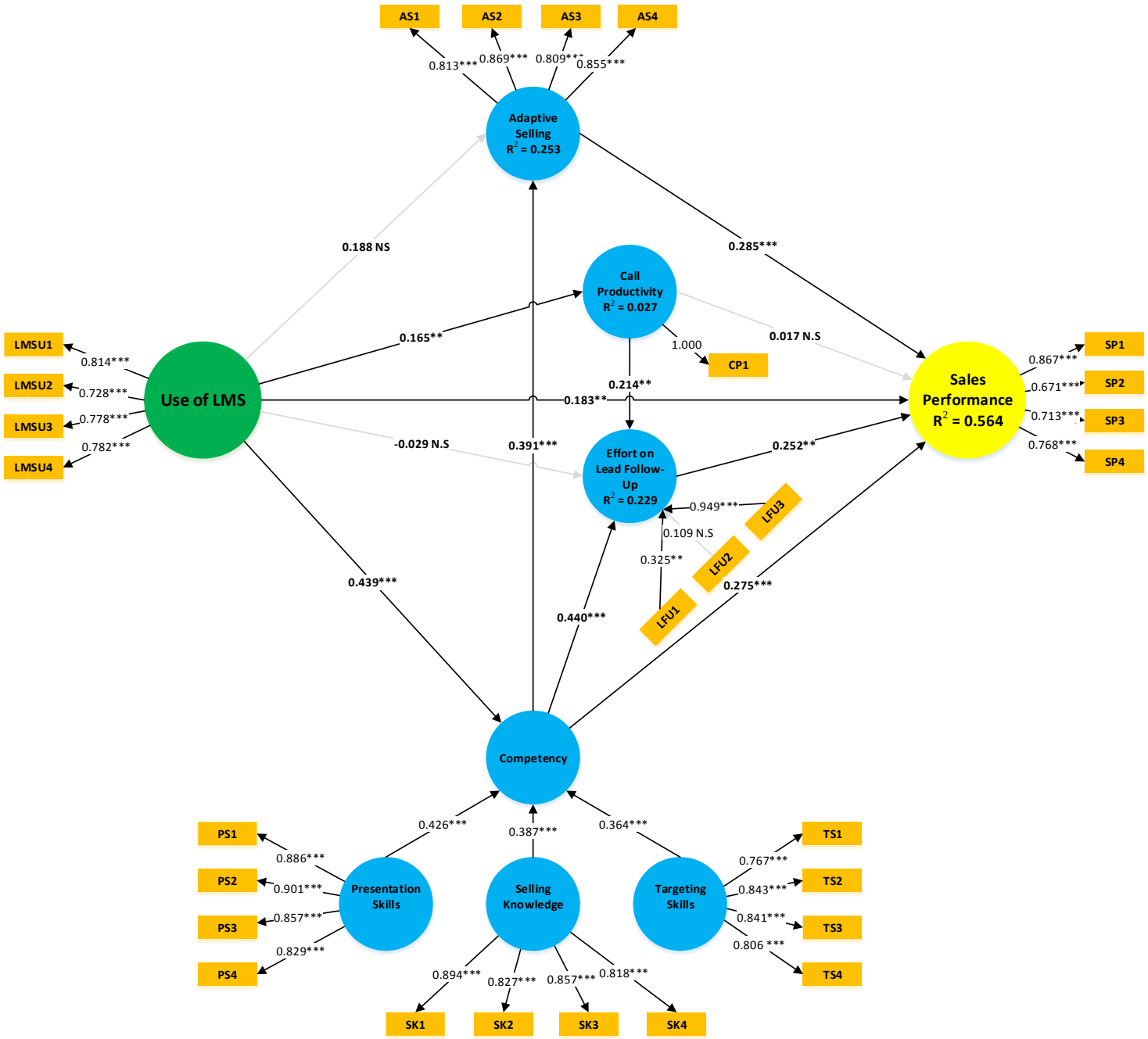

Figure 15: Queue-Based Data Analysis Model

APPENDIX F: COMPARISON OF LIST-BASED AND QUEUE-BASED SYSTEMS

Table 25: List-Based System V. Queue-Based Systems

Key Performance Indicators (KPI)	Industry Benchmark	List-Based Systems (Other Sources)	Queue-Based Systems (Survey)
Call Productivity	→ Company Variant: Average is between 8-10 calls per hour	→ Average = 8 → *(Source: Ovation Sales Group).*	→ Average = 23.7 → Median = 20.
Persistency: Contact Attempt Per New Lead	→ 8 contact attempts needed to first connect with a lead (*Source: Ovation Sales Group).*	→ Median = 1 and average = 2.2 *(Source: Annual 2014 Lead Response Report).*	→ Average = 9.1 → Median = 8
Persistency: Follow-up Contact Attempt Per Lead	→ 80% of sales require 5 follow-up calls *(Source: The Marketing Donut).*	→ 44% of salespeople discard a lead after 1 follow-up attempt *(Source: The Marketing Donut)*	→ Average = 8.6 → Median = 6
Contact Ratio	→ 80% of marketing qualified leads are not contacted by salespeople. (*Source: Marketing Sherpa's 2011 B2B Benchmark report).*	→ 47% of 9,538 companies that received a test lead did not attempt to contact the lead. (*Source: Annual 2014 Lead Response Report)*	→ On average, only 17% of leads are not contacted.
Response Time To Leads	→ Odds of connect is 100 times higher if contacted within 5 minutes (*Source: insideSales.com).*	→ Median = 3 hours 8 minutes. Average = 61 hours and 1 minute. 5.6% in 5 min (*Source: Annual 2014 Lead Response Report).*	→ Average and median is between 31 – 60 minutes. → 29% responded within 5 min